



United States
Department of
Agriculture



Cooperative State
Research,
Education, and
Extension Service

Competitive
Programs

SBIR-07-1

Program Solicitation

**Small Business Innovation
Research Program
Fiscal Year 2007**

**Phase I Closing Date: September 1, 2006
Phase II Closing Date: February 1, 2007**

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**Catalog of Federal Domestic Assistance Number (CFDA)
10.212 Small Business Innovation Research**

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The Program Solicitation may be downloaded from the USDA SBIR Web Page:

www.csrees.usda.gov/fo/sbir

***** **PLEASE READ** *****

IMPORTANT CHANGES IN THE USDA SBIR FY 2007 PROGRAM SOLICITATION

This is the final, complete version of the USDA SBIR FY2007 program solicitation. It contains key application information absent from the June 6, 2006 abbreviated version. Of particular importance, subsections 3.2, 3.3, 6.1 and 6.2 have been updated to instruct applicants regarding the required electronic submission of proposals through Grants.gov.

***** **PLEASE READ** *****

IMPORTANT CHANGES IN THE USDA SBIR FY 2007 PROGRAM SOLICITATION

Electronic Submission of Proposals - USDA SBIR will be requiring all FY2007 proposals to be submitted electronically through Grants.gov. This is a significant change, and applicants need to allow extra time and plan ahead. Information about the new forms and submission requirements for Grants.gov can be found in subsection 3.2. Proposals must be submitted via Grants.gov by 5:00 p.m. Eastern Time, on the program deadline as indicated under section 6.1 of this program solicitation.

USDA SBIR electronic application submissions consist of forms (viewed, completed, and submitted through the Grants.gov PureEdge Viewer) and attachments. The USDA SBIR program will only accept attachments in portable document format (PDF). Reviewers will not be provided non-PDF files in the review process.

If you do not own PDF-generating software, Grants.gov provides online tools to assist applicants. On the Grants.gov Customer Support webpage (<http://grants.gov/CustomerSupport>) users will find a link to "Convert Documents to PDF" (<http://grants.gov/assets/PDFConversion.pdf>). PDF documents submitted as a part of the application must also adhere to the following guidelines:

- margins not less than 1"; 2.5 cm all sides
- type at least 12 point font size regardless of whether it is single or double spaced.

Proposals that do not follow the guidelines for attachments stated above will not be accepted into the program and will be returned without review.

Revised Topic Areas – Revisions have been made to the following topic areas: 8.2 Plant Production and Protection – Biology; 8.3 Animal Production and Protection; 8.4 Soil and Water Resources; 8.5 Food Science and Nutrition; 8.6 Rural and Community Development, 8.8 Industrial Applications; and 8.11 Animal Manure Management

Discontinued Topic Area – Topic area 8.10 Wildlife has been discontinued and will no longer be offered as a part of the USDA SBIR program. Applicants with proposals relevant to this topic area may be able to submit these proposals to another topic area. Prior to submitting the proposal to one of these topic areas, please contact one of the National Program Leaders (see section 1.5).

New Topic Area – Topic area 8.13 Plant Production and Protection - Engineering was formerly listed as a suggested subtopic under section 8.2 Plant Production and Protection. Proposals that deal with engineering approaches to Plant Production should be now submitted to 8.13.

Increased Grant Ceiling – The maximum allowable award for phase II grants has been raised to \$350,000 (see subsection 1.2)

***** **PLEASE READ** *****

Proposals are encouraged that focus on the following issues.

Agriculturally-related Manufacturing Technology

On February 26, 2004 The President issued Executive Order 13329 (69 FR 9181) entitled "Encouraging Innovation in Manufacturing". In response to this Executive Order, USDA encourages the submission of proposals that deal with some aspect of agriculturally-related manufacturing technology (Section 2.17). Since manufacturing impacts all aspects of agriculture and rural development, proposals dealing with manufacturing could be submitted to any of the topic areas. If a proposal has a connection to manufacturing this should be indicated in section (2) of the project narrative (the project narrative is included as an attachment in Field 7 of the R&R Other Project Information) and a brief explanation of how it is related to manufacturing should be provided.

Bioterrorism

Following the terrorist attacks on 9/11/01, there has been an increased awareness of the importance of combating bioterrorism and thus research on better ways to combat bioterrorism is a top priority for USDA. Bioterrorism can affect plant and animal agriculture, water quality and food security and thus proposals dealing with bioterrorism could be submitted to several different topic areas. If a proposal has a connection to bioterrorism this should be indicated in section (2) of the project narrative (the project narrative is included as an attachment in Field 7 of the R&R Other Project Information) and a brief explanation of how it is related to bioterrorism should be provided.

Alternative and Renewable Energy

There is a growing realization that this country needs to reduce its dependence upon fossil fuels. USDA has established research on alternative and renewable energy as a high priority. Such research includes development of new energy crops, improved methods for producing biofuels such as ethanol and biodiesel, producing hydrogen and other fuel gases from agricultural waste, and more efficient use of energy in agricultural production and in rural communities. Energy issues impact all aspects of agriculture and rural development and thus proposals dealing with alternative and renewable energy could be submitted to many of the different topic areas. If a proposal has a connection to alternative and renewable energy this should be indicated in section (2) of the project narrative (the project narrative is included as an attachment in Field 7 of the R&R Other Project Information) and a brief explanation of how it is related to alternative and renewable energy should be provided.

USDA'S PROGRAM SOLICITATION SMALL BUSINESS INNOVATION RESEARCH FISCAL YEAR 2007

1.0 GENERAL PROGRAM DESCRIPTION

1.1 Introduction

The U.S. Department of Agriculture (USDA) invites science-based small business firms to submit research proposals under this program solicitation entitled "Small Business Innovation Research Program, Fiscal Year 2007." Firms with strong scientific research capabilities in any of the topic areas described in section 8.0 are encouraged to participate. USDA will support high-quality research or research and development (R/R&D) proposals containing advanced concepts related to important scientific problems and opportunities that could lead to significant public benefit if the research is successful.

Objectives of the Small Business Innovation Research (SBIR) program include stimulating technological innovation in the private sector, strengthening the role of small businesses in meeting Federal research and development needs, increasing private sector commercialization of innovations derived from USDA-supported research and development efforts, and fostering and encouraging participation by women-owned and socially and economically disadvantaged small business firms in technological innovation. Questions of a general nature about this SBIR solicitation should be sent to sbir@csrees.usda.gov or can be directed to one of the USDA SBIR National Program Leaders (see section 1.5).

1.2 Three-phase Program

NOTE: This program solicitation is primarily for the preparation and submission of Phase I proposals. However, the solicitation is also applicable for those preparing Phase II proposals, for it delineates the evaluation criteria that will be used and provides other relevant information. More detailed guidance on Phase II proposal preparation will be provided by the SBIR Program in a letter sent out in the fall of each year to Phase I awardees.

This program solicitation is issued pursuant to the Small Business Innovation Development Act of 1982, Pub. L. No. 97-219, as amended (15 U.S.C. 638) and Section 630 of the Act making appropriations for Agriculture, Rural Development, and Related Agencies' programs for fiscal year ending September 30, 1987, and for other purposes, as made applicable by Section 101(a) of Pub. L. No. 99-591, 100 Stat. 3341. This program is administered by the Cooperative State Research, Education, and Extension Service (CSREES) of the USDA.

This program is subject to the provisions found at 7 CFR Part 3403. These provisions set forth procedures to be followed when submitting grant proposals, rules governing the evaluation of proposals and the awarding of grants, and regulations relating to the post-award administration of grant projects. Changes have been proposed to the provisions and such changes have been incorporated into this solicitation. These changes are subject to the comments provided in response to the Small Business Innovation Research Grants Program – Proposed Rule (71 FR 28780, May 18, 2006).

The program will be carried out in three separate phases. Phase I is to determine the scientific or technical feasibility of ideas submitted by applicants on research topic areas described in section 8.0 of this solicitation with each award ranging up to \$80,000 for a period normally not to exceed 8 months. However, longer grant periods, up to 20 months, may be considered (See section 4.2(E)). The Phase I proposal should concentrate on research that will significantly contribute to **proving the scientific or**

technical feasibility of the approach or concept and will be a prerequisite to further USDA support in Phase II.

Phase II awards will be made during fiscal year (FY) 2007 to firms with approaches that appear sufficiently promising as a result of Phase I studies with each award ranging up to \$350,000 for a period normally not to exceed 24 months. **Normally, only those small businesses previously receiving Phase I awards in either FYs 2005 or 2006 are eligible to submit Phase II proposals in FY 2007. Please note, however, that for each Phase I project funded, the awardee may apply for a Phase II award only once. Proposals for Phase II normally may only be submitted to the Federal agency from which the Phase I award was received.**

Phase I awardees in FY 2006 who are unable to submit Phase II proposals for valid reasons during the FY 2007 funding cycle, will normally be eligible to apply for Phase II support no later than the FY 2008 funding cycle. One reason for not submitting the Phase II proposal during the FY 2007 funding cycle would be one which precludes completion of the Phase I project within the designated award period. In such instances, the awardee must request in writing, prior to the end of the Phase I grant period, a no-cost extension from the NPL outlining the circumstances which prevent completion of the project. Once the no-cost extension request is approved, any remaining Federal funds may be expended on the project in accordance with the approved budget within the extended award period.

Phase II is the principal research or research and development effort and will require a more comprehensive application, outlining the proposed effort in detail. At the appropriate time, the SBIR Program will send a letter to Phase I awardees eligible to submit Phase II proposals with instructions for preparing these proposals and a deadline date (normally early February of each year) for submitting applications. USDA recognizes that Phase II awards may not be sufficient in either dollars or time for the firm to complete the total research and development required to bring the project results to commercialization in the market place. Therefore, completion of the research under these circumstances may have to be carried into Phase III. The required Commercialization Plan should address this possibility (see subsection 3.3(E)).

See subsection 5.1 for estimated number of FY 2007 Phase I and Phase II awards and their established dollar limit.

The purpose of Phase III is to stimulate technological innovation and the national return on investment from research through the pursuit of commercialization objectives resulting from the USDA-supported work carried out in Phases I and II. No Federal SBIR funds may be used to support Phase III projects. However, firms are strongly encouraged to secure Phase III funding from their own resources or from other public and private sources of funds. Additionally, Phase III is to be conducted by the small business firm (including joint ventures and limited partnerships).

1.3 Follow-on Funding

In addition to supporting scientific research and development, the primary goal of this program is to provide incentive and opportunity for small business firms to convert USDA-sponsored research to technological innovation in the private sector. All proposed research should have some potential commercial outcome, and Phase II applicants are encouraged to obtain a contingent commitment for non-SBIR follow-on funding to pursue further development of the commercial potential during Phase III. Government funding pays for research relating to Federal objectives (Phases I and II); non-SBIR (public or private) funding pays for development of commercial objectives (Phase III).

Obtaining follow-on financial commitment(s) is the responsibility of the applicant. USDA understands that any such commitment will likely be contingent upon the Phase II awardee attaining technical objectives that are mutually agreed upon between the small business firm and the provider of the follow-on funding. These objectives should be closely related to those delineated in the Phase II research proposal. The technical objectives should be clearly defined and measurable and should be specified in the commitment agreement at the threshold level that would justify such an investment. The objectives do not have to be identical to those stated in the Phase II proposal, but they must be able to be accomplished within the scope of the proposed SBIR-funded research. Any letters or other forms of tentative commitment for follow-on Phase III funding from sources other than Federal SBIR Programs will be considered.

Phase I proposals should contain a brief description of any potential commercial application(s) and whether or not the small business firm will attempt to secure follow-on, non-SBIR funding to pursue the commercial development of the expected products from the proposed research. In order for Phase II applicants to receive consideration of follow-on funding during the review and evaluation process, a signed contingent commitment between the small business firm and the entity providing the follow-on financial support should be submitted with the Phase II application. While such commitment agreements are optional when submitting Phase II proposals, they will receive special consideration as a point of merit in the review and evaluation process where proposals are evaluated as being of approximately equal technical merit. **The maximum value (in Phase II evaluation) will be given for a signed formal agreement with reasonable terms and funding equal to or in excess of the Federal investment requested in the Phase II proposal.** The agreement should set forth the specific amount of Phase III funds and should indicate the dates that such funds will be made available to the small business firm. Also, the agreement should contain a few specific technical objectives which, if achieved in Phase II, will make the commitment usable by the small business firm. The terms cannot be contingent upon the obtaining of a patent due to the length of time this process requires.

The commitment may be in the form of venture capital or a package including venture capital, contract research and development, a joint venture, a research and development limited partnership, or other agreement with a non-SBIR source of funding. No amortization, repayment, or repurchase of commitment funds may be included during the Phase II period of performance.

1.4 Eligibility

Each concern submitting a proposal must qualify as a small business concern for research or research and development purposes at the time of award (see definitions in section 2.0). A potential grantee that is a subsidiary must show that the parent company is also a small business entity and the parent company must provide documentation supporting their small business status (the documentation should be included in Field 11, Other Attachments, of the R&R Other Project Information form). If the parent company is not a small business entity, then the subsidiary is not eligible to submit an SBIR proposal. In addition, the primary employment of the project director must be with the small business concern at the time of award and during the conduct of the proposed research, unless otherwise approved in writing by the funding agreement officer after consultation with the appropriate National Program Leader. Primary employment means that more than one-half of the project director's time is spent in the employ of the small business. Primary employment with the small business applicant precludes full-time employment with another organization. This requirement applies to both Phase I and Phase II awards. Any deviations from this requirement must be approved in writing by the funding agreement officer after consultation with the appropriate National Program Leader. While the project director must work more than one-half of his/her time for the small business during the entire grant period, there is no minimal time requirement for what percentage of the project director's time is spent working on the proposed research.

To be eligible for award of funding agreements in the USDA's Small Business Innovation Research (SBIR) program, a business concern must meet the requirements of paragraphs (A) and (B) below:

(A) Ownership and control.

(1) An SBIR awardee must (i) be a concern which is at least 51% owned and controlled by one or more individuals who are citizens of the United States, or permanent resident aliens in the United States; or

(ii) Be a concern which is at least 51% owned and controlled by another business concern that is itself at least 51% owned and controlled by individuals who are citizens of, or permanent resident aliens in the United States; or

(iii) Be a joint venture in which each entity to the venture must meet the requirements set forth in either paragraphs (a)(1)(i) or (a)(1)(ii) of this section.

(2) If an Employee Stock Option Plan owns all or part of the concern, USDA considers each stock trustee and plan member to be an owner.

(3) If a trust owns all or part of the concern, USDA considers each trustee and trust beneficiary to be an owner.

(B) Size. An SBIR awardee, together with its affiliates, not have more than 500 employees.

The small business concern must be the primary performer of the proposed research effort. In Phase I, a minimum of **two-thirds** of the research or analytical work, as determined by budget expenditures, must be performed by the proposing organization. For **Phase II awards**, a minimum of **one-half** of the research or analytical effort must be conducted by the proposing firm.

Also, for both Phase I and Phase II, the R/R&D work must be performed in the United States. However, based on a rare and unique circumstance, for example, a supply or material or other item or project requirement that is not available in the United States, agencies may allow that particular portion of the R/R&D work to be performed or obtained in a country outside of the United States. Approval, in writing, is necessary by both the responsible National Program Leader and the funding agreement officer for such specific conditions.

Phase II proposals may be submitted only by Phase I Awardees. This includes those awardees identified via a "novated" or "successor-in-interest" revised funding agreement.

1.5 Agency Contacts

Applicants and other interested parties are encouraged to contact the SBIR National Program Leader indicated for more information about each topic area listed below.

Dr. Charles Cleland (ccleland@csrees.usda.gov)

Telephone: (202) 401-6852

Fax: (202) 401-6070

8.1 Forests and Related Resources

8.4 Soil and Water Resources

8.7 Aquaculture

8.12 Small and Mid-Size Farms

Dr. William Goldner (wgoldner@csrees.usda.gov)

Telephone: (202) 401-1719

Fax: (202) 401-6070

8.2 Plant Production and Protection - Biology

8.8 Industrial Applications

8.13 Plant Production and Protection - Engineering

Dr. Peter Burfening (pburfening@csrees.usda.gov)

Telephone: (202) 401-5823

Fax: (202) 401-6070

8.3 Animal Production and Protection

Dr. Siva Sureshwaran (ssureshwaran@csrees.usda.gov)

Telephone: (202) 720-7536

Fax: (202) 401-6070

8.5 Food Science and Nutrition

8.6 Rural and Community Development

8.9 Marketing and Trade

Dr. Richard Hegg (rhegg@csrees.usda.gov)

Telephone: (202) 401-6550

Fax: (202) 401-6070

8.11 Animal Manure Management

2.0 DEFINITIONS

The following definitions apply for purposes of this solicitation:

2.1 Ad hoc Reviewers

Experts or consultants, qualified by training and experience in particular scientific or technical fields to render expert advice on the scientific technical merit of the grant applications in those fields, who review on an individual basis one or several of the eligible proposals submitted to this program in their area of expertise and who submit to the Department written evaluations of such proposals.

2.2 Applicant

The organizational entity that, at the time of award, will qualify as a small business concern and that submits a grant application for a funding agreement under the SBIR Program.

2.3 Authorized Departmental Officer

The authorized departmental officer (ADO) is the Secretary or any employee of the Department who has the authority to issue or modify grant instruments on behalf of the Secretary. The ADO is also referred to as the Funding Agreement Officer.

2.4 Authorized Organizational Representative

The authorized organizational representative (AOR) is the president, director, chief executive officer or other designated official of the applicant small business concern who has the authority to commit the resources of the organization. **Note: AOR is referred to as Authorized Representative (AR) on the grants.gov SF-424 (R&R forms).**

2.5 Budget Period

The interval of time into which the project period is divided for budgetary and reporting purposes.

2.6 Commercialization

Commercialization is defined as the process of developing marketable products or services and producing and delivering products or services for sale (whether by the originating party or by others) to Government or commercial markets.

2.7 CSREES

The Cooperative State Research, Education and Extension Service.

2.8 Department

The U. S. Department of Agriculture.

2.9 Essentially Equivalent Work

Occurs when (1) substantially the same research is proposed for funding in more than one grant application submitted to the same Federal agency; (2) substantially the same research is submitted to two

or more different Federal agencies for review and funding consideration; or (3) a specific research objective and the research design for accomplishing an objective are the same or closely related in two or more proposals or awards, regardless of the funding source.

2.10 Funding Agreement

A funding agreement is any contract, grant, or cooperative agreement entered into between any Federal agency and any small business concern for the performance of experimental, developmental, or research work, including products or services funded in whole or in part by the Federal Government.

2.11 Grant

A financial assistance mechanism providing money, property, or both to an eligible entity to carry out the approved project or activity, and substantial programmatic involvement by Government is not anticipated.

2.12 Grantee

The small business concern designated in the grant award document as the responsible legal entity to whom the grant is awarded under this part. Also referred to as an “awardee.”

2.13 Historically Underutilized Business Zone (HUBZone)

A small business concern meeting the following criteria:

(A) Located in a “historically underutilized business zone” or HUBZone area located in one or more of the following:

- (1) A qualified census tract** (as defined in section 42(d)(5)(C)(i)(I) of the Internal Revenue Code of 1986); or
- (2) A qualified “non-metropolitan county”** (as defined in section 143(k)(2)(B) of the Internal Revenue Code of 1986); or
- (3) On an Indian Reservation-** Land within the boundaries of a Federally recognized Indian Reservation.

(B) Owned and controlled by one or more US Citizens; and

(C) At least 35% of its employees must reside in a HUBZone.

2.14 Innovation

Is something new or improved, having marketable potential including (1) development of new technologies, (2) refinement of existing technologies, or (3) development of new applications for existing technologies.

2.15 Intellectual Property

The separate and distinct types of intangible property that are referred to collectively as “intellectual property,” including but not limited to: patents, trademarks, copyrights, trade secrets, SBIR technical data (as defined in this section), ideas, designs, know-how, business, technical and research methods, other types of intangible business assets, and all types of intangible assets either proposed or generated by a small business concern as a result of its participation in the SBIR Program.

2.16 Joint Venture

An association of concerns with interests in any degree or proportion by way of contract, express or implied, consorting to engage in and carry out a single specific business venture for joint profit, for which purpose they combine their efforts, property, money, skill, or knowledge, but not on a continuing or permanent basis for conducting business generally. A joint venture is viewed as a business entity in determining power to control its management.

2.17 Manufacturing Related

Encompasses improvements in existing methods or processes, or wholly new processes, machines or systems. Four main areas include:

(A) Unit process level technologies that create or improve manufacturing processes, including:

- (1)** Fundamental improvements in existing manufacturing processes that deliver substantial productivity, quality, or environmental benefits; or
- (2)** Development of new manufacturing processes, including new materials, coatings, methods, and associated practices.

(B) Machine level technologies that create or improve manufacturing equipment, including:

- (1)** Improvements in capital equipment that create increased capability (such as accuracy or repeatability), increased capacity (through productivity improvements or cost reduction), or increased environmental efficiency (safety, energy efficiency, environmental impact); or
- (2)** New apparatus and equipment for manufacturing, including additive and subtractive manufacturing, deformation and molding, assembly and test, semiconductor fabrication, and nanotechnology.

(C) Systems level technologies for innovation in the manufacturing enterprise, including:

- (1)** Advances in controls, sensors, networks, and other information technologies that improve the quality and productivity of manufacturing cells, lines, systems, and facilities;
- (2)** Innovation in extended enterprise functions critical to manufacturing, such as quality systems, resource management, supply change integration, and distribution, scheduling and tracking; or
- (3)** Technologies that enable integrated and collaborative product and process development, including computer-aided and expert systems for design, tolerancing, process and materials selection, life-cycle cost estimation, rapid prototyping, and tooling.

(D) Environment or societal level technologies that improve workforce abilities, productivity, and manufacturing competitiveness, including:

- (1)** Technologies for improved workforce health and safety, such as human factors and ergonomics; or
- (2)** Technologies that aid and improve workforce manufacturing skill and technical excellence, such as educational systems incorporating improved manufacturing knowledge and instructional methods.

2.18 Outcomes

The measure of long-term, eventual, program impact.

2.19 Outputs

The measures of near-term program impact.

2.20 Peer Review Group

Experts or consultants, qualified by training and experience in particular scientific or technical fields to give expert advice on the scientific and technical merit of grant applications to those fields, who assemble as a group to discuss and evaluate all of the eligible proposals submitted to this program in their area of expertise.

2.21 Principal Investigator/Project Director (PI/PD)

The one individual designated by the applicant to provide the scientific and technical direction to a project supported by the funding agreement.

2.22 Professional Employer Organization

An organization that provides an integrated approach to the management and administration of the human resources and employer risk of its clients, by contractually assuming substantial employer rights, responsibilities, and risk, through the establishment and maintenance of an employer relationship with the workers assigned to its clients.

2.23 Program Solicitation

A program solicitation is a formal request for proposals whereby a Federal agency notifies the small business community of its research or R&D needs and interests in broad and selected areas as appropriate to the agency, and requests proposals from small business concerns in response to these needs and interests.

2.24 Prototype

A model of something to be further developed, which includes designs, protocols, questionnaires, software, and devices.

2.25 Project period

The total length of time that is approved by the Department for conducting the research project as outlined in an approved grant application.

2.26 Research or Research and Development

Research or research and development (R/R&D) means any activity which is:

- (A) A systematic, intensive study directed toward greater knowledge or understanding of the subject studied;
- (B) A systematic study directed specifically toward applying new knowledge to meet a recognized need; or
- (C) A systematic application of knowledge toward the production of useful materials, devices, and systems or methods, including design, development, and improvement of prototypes and new processes to meet specific requirements.

2.27 Research Project Grant

The award by the Department of funds to a grantee to assist in meeting the costs of conducting for the benefit of the public an identified project which is intended and designed to establish, discover, elucidate, or confirm information or the underlying mechanisms relating to a research topic area identified in the annual solicitation of applications.

2.28 SBIR Participants

Business concerns that have received SBIR awards or that have submitted SBIR proposals/applications.

2.29 SBIR Technical Data

All data generated during the performance of an SBIR award.

2.30 SBIR Technical Data Rights

The rights a small business concern obtains in data generated during the performance of any SBIR award that an awardee delivers to the Government during or upon completion of a Federally-funded project, and to which the government receives a license.

2.31 Small Business Concern

Small business concern (SBC) means a concern that, on the date of award for both Phase I and Phase II funding agreements:

- (1) is organized for profit, with a place of business located in the United States, which operates primarily within the United States, or which makes a significant contribution to the United States economy through the payment of taxes or use of American products, materials or labor;
- (2) is in the legal form of an individual proprietorship, partnership, limited liability company, corporation, joint venture, association, trust or cooperative, except that where the form is a joint venture, there can be no more than 49 percent participation by foreign business entities in the joint venture;
- (3) is at least 51 percent owned and controlled by one or more individuals who are citizens of, or permanent resident aliens in, the United States, except in the case of a joint venture, where each entity in the venture must be 51 percent owned and controlled by one or more individuals who are citizens of, or permanent resident aliens in the United States; and
- (4) has, including its affiliates, not more than 500 employees. The term “affiliates” is defined in greater detail in 13 CFR 121.103. The term “number of employees” is defined in 13 CFR 121.106.

2.32 Small and Mid-Size Farms

Small Farms are defined as farms or ranches with less than \$250,000 in annual agricultural sales. Mid-Size Farms are defined as farms or ranches with less than \$500,000 in annual agricultural sales.

2.33 Socially and Economically Disadvantaged Small Business Concern

A socially and economically disadvantaged small business concern is one:

- (A) Which is at least 51 percent owned by (i) an Indian tribe or a native Hawaiian organization or (ii) one or more socially and economically disadvantaged individuals and
- (B) Whose management and daily business operations are controlled by one or more socially and economically disadvantaged individuals.

For purposes of this solicitation, a socially and economically disadvantaged individual is defined as a member of any of the following groups: Black Americans, Hispanic Americans, Native Americans, Asian-Pacific Americans, Subcontinent Asian Americans, other groups designated from time to time by the Small Business Administration (SBA) to be socially disadvantaged, or any other individual found to be socially and economically disadvantaged by the SBA pursuant to Section 8(a) of the Small Business Act, 15 U.S.C. 637(a).

Note: The certification of socially and economically disadvantaged small business is for statistical purposes only.

2.34 Subcontract

A subcontract is any agreement, other than one involving an employer-employee relationship, entered into by an awardee of a funding agreement calling for supplies or services for the performance of the original funding agreement.

2.35 United States

United States means the 50 states, the territories and possessions of the Federal Government, the Commonwealth of Puerto Rico, the District of Columbia, the Republic of the Marshall Islands, the Federated States of Micronesia, and the Republic of Palau.

2.36 Women-owned Small Business Concern

A women-owned small business concern is one:

- (A) Which is at least 51 percent owned by one or more women and
- (B) Whose management and daily business operations are controlled by one or more women.

Note: Certification of women-owned small business is for statistical purposes only.

3.0 PROPOSAL PREPARATION INSTRUCTIONS AND REQUIREMENTS

3.1 Proposal Requirements

The proposed research must be responsive to one of the USDA program interests stated in the research topic area descriptions of this solicitation (See section 8.0). The USDA does not prioritize between research topic areas. Each topic area designation lists several subtopics. In some cases special emphasis is placed on certain subtopics (see section 8.0) and proposals are especially encouraged that address one of these subtopics. However, in every case, applicants are free to submit proposals on the subjects not covered by one of the suggested subtopics so long as the proposal is responsive to the general area covered by the research topic area. Thus, the specific research objectives proposed by applicants are investigator-initiated and not initiated by the USDA. The same research can often be the basis for technological innovation, new commercial products, processes, or services which benefit the public. This is a desirable economic objective, and such proposals are encouraged.

Proposals must address only scientific research activities. **A small business must not propose technical assistance, demonstration projects, classified research, or patent applications.** Many of the research projects supported by the SBIR program lead to the development of new products based upon the research results obtained during the project. However, projects that seek funding solely for product development where no research is involved (i.e., the funds are needed to permit the development of a product based on previously completed research) will not be accepted.

Literature surveys should be completed prior to the Phase I or Phase II submission of the proposal and should not be proposed as part of the R&D effort. Proposals that deal principally with developing proven concepts for commercial markets or scaling up previously developed prototypes for commercial production should not be submitted, since such efforts are considered the responsibility of the private sector and therefore are not supported by USDA. A proposal must be limited to only one research problem. The title of the proposal must be entered on the SF-424 R&R Cover Sheet, Field 11. The same proposal may not be submitted under more than one topic area. However, an organization may submit separate proposals under different topic areas or different proposals under the same topic area under this solicitation. Where similar research is discussed under more than one topic area, the applicant should choose the topic area whose description is most relevant to the applicant's research concept. Applicants may respond to any of the topic areas listed under section 8.0. Research may be carried out through the construction and evaluation of a laboratory prototype, where necessary. Duplicate proposals will be returned to the applicant without review.

The purpose of a research proposal is to provide a written statement that contains sufficient information to persuade members of the research community who review the proposal and then advise the USDA SBIR professional staff that the proposed research is a sound approach to an important scientific question and is worthy of support under the stated USDA evaluation criteria (see section 4.0). The proposal should be self-contained and written with the care and thoroughness accorded papers for publication. Each proposal should be reviewed carefully by the applicant prior to submission and by others knowledgeable on the subject to ensure inclusion of data essential for comprehensive evaluation.

3.2 New Forms and Submission Requirements

For all FY 2007 proposals, the USDA SBIR program will require electronic proposal submission through Grants.gov (www.grants.gov). Submission through Grants.gov requires the use of new forms. Proposals not submitted electronically and/or proposals submitted using incorrect or older forms will not be accepted into the program and will be returned without review.

To access the electronic application via Grants.gov, go to www.grants.gov, under the “Apply for Grants” heading on the right-hand side of page click on “Download Grant Application Packages,” enter the CFDA number (i.e., 10.212) in the appropriate box to search by CFDA number. **From the search results, select the item with CFDA number 10.212, Small Business Innovation Research.** Applicants can also access the appropriate page on Grants.gov by visiting the USDA SBIR funding opportunity page at <http://www.csrees.usda.gov/fo/sbir>. Clicking on the Funding Opportunity Number listed near the bottom of the page will link the applicant directly to the information and forms necessary to submit through Grants.gov.

To access the necessary forms, PureEdge Viewer software is needed. The PureEdge Viewer is a small, free program which will allow you to access, complete and submit applications electronically and securely on Grants.gov. For further information see <http://www.grants.gov/DownloadViewer>.

(A)Resources

Online

There are considerable online resources to help potential applicants with the new forms and submission requirements. The Get Started tab on Grants.gov (www.grants.gov/GetStarted) provides information on registering your company with Grants.gov and the steps necessary to apply for a grant. A quick reference guide listing these steps is available as a 2-page PDF document at the following website: <http://www.grants.gov/assets/Grants.govRegistrationBrochure.pdf>.

In addition, CSREES has developed documentation to help navigate these new processes. The central point for all information related to the transition to electronic submission for the USDA SBIR program is www.csrees.usda.gov/funding/electronic. This site is updated frequently and it should be checked often for program-specific help concerning electronic submission of USDA SBIR grants.

One of the principal resources available is the CSREES GRANTS.GOV Application guide (http://www.csrees.usda.gov/funding/grant_forms/electronic_app_guide.pdf)

which provides guidance for completing the forms required by Grants.gov and CSREES. Used in conjunction with the program solicitation, this guide will assist applicants with most field-specific questions.

Personalized

Questions about the registration process through Grants.gov, the PureEdge Viewer software needed to download, complete and submit electronically, or technical problems related to the Grants.gov website should be directed to Grants.gov staff. They can be reached by phone at **1-800-518-GRANTS** or via email at support@grants.gov.

Answers to field specific questions about the SF-424 (R&R) forms package should be found in either the program solicitation or the CSREES GRANTS.GOV Application guide (http://www.csrees.usda.gov/funding/grant_forms/electronic_app_guide.pdf).

If you are unable to find the answer that you need, please send an email to electronic@csrees.usda.gov with your question. Make sure to identify the form name, the field number related to your question and state that you will be applying to the USDA SBIR program.

Any program-specific questions concerning the USDA SBIR program, such as the appropriateness of your proposed research or work plan, should be directed to the National Program Leader responsible

for the topic area where you wish to submit your proposal (see section 8.0). You can also contact the USDA SBIR office at sbir@csrees.usda.gov or 202-401-4002.

(B) Registration Procedure

The registration procedure for companies or individuals intending to submit a grant application through Grants.gov requires several steps and must be finished prior to submitting a proposal. This is a one-time registration process; however, it can take as much as one month to complete so it is critical that companies begin this process as soon as possible. Listed below are the steps necessary to be able to submit a proposal through Grants.gov. More information about these steps is available at www.grants.gov/Register. A quick reference guide listing these steps is available as a 2-page PDF document at the following website:

<http://www.grants.gov/assets/Grants.govRegistrationBrochure.pdf>.

STEP 1 – Register Your Organization

Obtain your organization's Data Universal Number System (DUNS) number

A DUNS number is a unique number that identifies an organization. It has been adopted by the Federal government to help track how Federal grant money is distributed. If your organization does not have a DUNS number, call the special Dun & Bradstreet hotline at 1-866-705-5711 to receive one free of charge. You will receive a DUNS number at the conclusion of the phone call. **Please note, individual proprietorships (farmers, ranchers etc.) can request and receive a DUNS number.**

Register your organization with Central Contractor Registry (CCR)

The CCR is the central government repository for organizations working with the Federal government. If your organization is not already registered, identify the primary contact who should register your organization. When your organization registers with CCR, it will be required to designate an E-Business Point of Contact (E-Business POC). The designee authorizes individuals to submit grant applications on behalf of the organization and creates a special password called a Marketing Partner ID Number (M-PIN) to verify individuals authorized to submit grant applications for the organization. Visit the CCR website at <http://www.ccr.gov> to begin this process. It may take a couple of days for you to collect the information needed for your organization's registration. The CCR Assistance Center can be reached at 888-227-2423.

STEP 2 – Register an Authorized Organization Representative (AOR) for your Company

Obtain your username and password

In order to safeguard the security of your electronic information, and to submit a Federal grant application via Grants.gov, you must first obtain a username and password from the Grants.gov Credential Provider. Register with Grants.gov's Credential Provider at <http://www.grants.gov/Register1>. You will need to enter your organization's DUNS number to access the registration form. Once you complete the registration form you will be given your username and you will create your own password.

Register with Grants.gov

After obtaining your username and password, allow about 30 minutes for your data to transfer from the Credential Provider. Then you must register with Grants.gov to set up a short profile. Visit <http://www.grants.gov/Register2> to register your username and password and set up your profile. You will only be authorized for the DUNS number that you register in your Grants.gov profile.

STEP 3 – Get Yourself Authorized as an AOR

Obtain your E-Business POC authorization

After your AOR profile is completed, your organization's E-Business POC will receive an email regarding your requested AOR registration with links and instructions to authorize you as an AOR. Instruct your E-Business POC to login to Grants.gov at <http://www.grants.gov/ForEbiz> and enter your organization's DUNS number and M-PIN. They will select you as an AOR they wish to authorize and you will be verified to submit grant applications. You can check your AOR status by logging in to Grants.gov at <http://www.grants.gov/ForApplicants>.

(C) Special Considerations

Attachment Format

USDA SBIR electronic application submissions consist of forms (viewed, completed, and submitted through the Grants.gov PureEdge Viewer) and attachments. The USDA SBIR program will only accept attachments in portable document format (PDF). Reviewers will not be provided non-PDF files in the review process.

If you do not own PDF-generating software, Grants.gov provides online tools to assist applicants. On the Grants.gov Customer Support webpage (<http://grants.gov/CustomerSupport>) users will find a link to "Convert Documents to PDF" (<http://grants.gov/assets/PDFConversion.pdf>). PDF documents submitted as a part of the application must also adhere to the following guidelines:

- **margins not less than 1"; 2.5 cm all sides**
- **type at least 12 point font size regardless of whether it is single or double spaced.**

Proposals that do not follow the guidelines for attachments stated above will not be accepted into the program and will be returned without review.

Page Limitations

Proposals submitted electronically via Grants.gov consist of forms and PDF attachments. Consequently, the page limitations for proposal sections found in previous USDA SBIR solicitations no longer apply. **However, there are several new page limitations for attachments that need to be followed (see section 3.3). Proposals that do not follow the page limits outlined in section 3.3 will not be accepted into the program and will be returned without review.**

Changes, Additions or Corrections

Under some circumstances, changes, additions, or corrections may be necessary to a proposal submitted to the USDA SBIR program via Grants.gov. Prior to submitting any modifications to your proposal, you must contact the National Program Leader responsible for the topic area where you wish to submit your proposal (see section 8.0). **Do not submit modifications to your proposal directly to Grants.gov. Submitting changes to Grants.gov without contacting the National Program Leader could significantly delay the acceptance of your proposal into the program.**

3.3 Proposal Format and Content

Those who wish to submit a proposal to the USDA SBIR program should submit the following forms and associated attachments via Grants.gov. Please note any page limitations indicated (in bold) that are appropriate for a given section/attachment. **To successfully complete the information required you will need to review both the sections indicated below as well as the CSREES GRANTS.GOV Application guide (http://www.csrees.usda.gov/funding/grant_forms/electronic_app_guide.pdf).**

If there is a discrepancy between the two documents, the information contained in the program solicitation is overriding. Field specific instructions in the sections below are in bold and indicate (by number and name) the field to which they refer on the appropriate form. Not all fields are referenced below, only those where information beyond that provided by the CSREES GRANTS.GOV Application guide (http://www.csrees.usda.gov/funding/grant_forms/electronic_app_guide.pdf) is necessary.

It is not necessary to provide a lengthy discourse on commercial applications in the Phase I proposal except to discuss them briefly under subsection 3.3(H) (item (5) of Field 7), as appropriate, as well as under subsection 3.3(H) (item (8) of Field 7). The Phase I proposal must be principally directed at feasibility-related research or R&D on the specific topic chosen.

The following instructions apply for both Phase I and II proposals, unless otherwise noted. **Phase II proposals may only be submitted by Phase I award winners as noted in section 1.2.**

(A) SF-424 R&R Cover Sheet

Field 2. Applicant Identifier – This field is provided for the Applicant’s use if they have an internal tracking system they would like to use in tracking proposals they have submitted. This field is not required.

Field 3. Date received by State and State Application Identifier – This is not applicable for USDA SBIR proposals and these fields do not need to be completed.

Field 5. Person to be contacted on matters related to this application –Please note: the USDA SBIR program’s official correspondence will be with either the PD or AOR.

Field 11. Descriptive Title of Applicant’s Project – The title should be a brief (140-character-maximum), clear, specific designation of the research proposed. It will be used to provide information to Congress and also will be used in issuing press releases; it should not contain highly technical words. In addition, phrases such as “investigation of” or “research on” should not be used.

Field 13. Proposed Project Start Date and End Date – The proposed duration of Phase I projects should normally not exceed 8 months, except in special, justified circumstances, and the duration of Phase

II projects should normally not exceed 24 months. Where a proposed research project requires more than 8 months to complete in Phase I, a longer grant period, not to exceed 20 months, may be considered. An applicant of a Phase I project with an anticipated duration beyond 8 months should specify and justify the length of duration in the proposal at the time of its submission to USDA in order for it to be considered. In most circumstances, the following dates should be used for these fields:

	Start	End
Phase I	5/1/2007	12/31/2007
Phase II	9/1/2007	8/31/2009

Field 17. Is this Application Subject to Review by State Executive Order 12372 Process – Check No. The USDA SBIR program is not covered by State Executive Order 12372.

Field 18. Please refer to the CSREES GRANTS.GOV Application guide (http://www.csrees.usda.gov/funding/grant_forms/electronic_app_guide.pdf).
for information on the Certifications that are being agreed to by checking this box.

Field 20. Pre-application – This is not applicable to the USDA SBIR program. No attachments should be added.

(B) CSREES Supplemental Information

Field 2. Program to Which You Are Applying and Program Code – This refers to the topic area (see section 8.0) to which you are submitting your USDA SBIR proposal. For example:

Program Code Name
Animal Manure Management
Program Code
8.11

If you have a question about which topic area is appropriate for your proposal, please contact the National Program Leader(s) in the area(s) in question. A proposal can only be submitted to one topic area. Note: It is extremely important the Program Code Name and Program Code are spelled correctly and match exactly one of the topic areas indicated in section 8.0 of the program solicitation. Failure to complete these fields correctly could significantly delay the acceptance of your proposal into the program.

Field 8. Conflict of Interest List – A conflict of interest attachment is not necessary for USDA SBIR proposals. No attachments should be added.

(C) SBIR/STTR Information

Program Type – Select SBIR only. USDA does not offer an STTR program.

SBIR/STTR Type – Select Phase I or Phase II. The USDA SBIR program does not offer the Fast-Track Option.

Field 1. Do you certify that at that at the time of award your organization will meet the eligibility criteria for a small business as defined in the funding opportunity announcement? – Enter yes or no.

Field 2. Does this application include subcontracts with Federal laboratories or any other Federal Government agencies? Enter yes or no. **If yes, insert the names of the Federal laboratories/agencies.**

Field 3. Are you located in a HUBZone? – Enter yes or no.

Field 4. Will all research and development on the project be performed in its entirety in the United States? – Enter yes or no. **If no, provide an explanation in an attached PDF file** (if no, this is required information).

See subsection 3.3(D) below.

Field 5. Has the applicant and/or Program Director/Principal Investigator submitted proposals for essentially equivalent work under other Federal program solicitations or received other Federal awards for essentially equivalent work? – Enter yes or no. **If yes, insert the names of the other Federal agencies** (if yes, this is required information).

Field 6. Disclosure Permission Statement: If this application does not result in an award, is the Government permitted to disclose the title of your proposed project, and the name, address, telephone number and e-mail address of the official signing for the applicant organization, to organizations that may be interested in contacting you for further information (e.g., possible collaborations, investment)? – Enter yes or no.

Field 7. Commercialization – See subsection 3.3(E) below

Field 8. Documentation of Prior SBIR Phase II Awards – See subsection 3.3(F) below

Fields 10-11. STTR-Specific Questions – Do not respond to these questions. They are not applicable to the USDA SBIR program

(D) Non Domestic Performance Explanation (PDF format only)

Requests for foreign travel or work are discouraged but may be approved (e.g., proposals submitted to the Marketing and Trade topic area that are focused on export issues) based on the justification provided in the proposal. In the budget justification, provide the purpose, the destination, method of travel, number of persons traveling, number of days, and estimated cost for each trip. If details of each trip are not known at the time of proposal submission, provide the basis for determining the amount requested.

(E) Commercialization Plan (Phase II only) (PDF format only)

10 Pages

The commercialization plan should provide a description of each of the following areas and is limited to 10 pages:

(1) Introduction of the SBIR Project and Expected Outcomes: Describe, in layperson's terms, the proposed project and its key technology objectives. Clarify the need addressed, specifying weaknesses in the current approaches to meet this need. In addition, describe the commercial applications of the research and the innovation inherent in the application.

(2) Company Information: Give a brief description of your company including corporate objectives, core competencies, size (annual sales level and number and types of employees for the last 5 years, if company has existed for more than 5 years), and any current products/services that have

significant sales. Those grantees existing for less than five years should provide this information for the years they have been operational. Indicate your vision for the future and how you will grow/maintain a sustainable business entity. Include a short description of the origins of the company.

(3) The Market, Customer, and Competition: Describe the market and/or market segments (for the product, technology or service) you are targeting and provide information on the size of the market and a brief profile of the potential customer. Tell what significant advantages your innovation will bring to the market (e.g., better performance, lower cost, faster, more efficient or effective, new capability). Explain the hurdles you will need to overcome in order to gain market/customer acceptance of your innovation. Briefly explain the plans you have for approaching your potential customers, i.e., your marketing and sales strategy. Describe the current competition and any potential competitors over the next several years. Include a schedule showing the projected needs (e.g., amount of additional investment, timeframe, etc.) from the end of Phase II until commercialization. Applicant should also indicate any other potential commercial factors.

(4) Intellectual Property: Describe how you will protect the intellectual property that results from your innovation. Note any actions you may consider to attain at least a temporary competitive advantage. What is the company's prior record in this area? Please comment on the company's strategy to build a sustainable business through protection of intellectual property.

(5) Revenue Stream: Describe the plans for generating a revenue stream and include the assumptions that form the basis for revenue projections. Will the revenue stream as described be profitable to the company or at least sustain the product through its life cycle?

(6) Financing: How will you raise the necessary financing for Phase III commercialization? Show you have a plan for this funding in one or more of the following ways:

- (a) A letter of commitment for follow-on funding;
- (b) A letter of intent or evidence of negotiations to provide funding, should the Phase II project be successful and the market need still exists;
- (c) A letter of support for the project and/or some in-kind commitment;
- (d) A specific plan that you have to take to secure Phase III funding. The progress of this plan must be commented on in the Phase II progress report.

(F) Documentation of Prior SBIR Phase II Awards (PDF format only)

(1) A small business firm that submits a proposal for a funding agreement for Phase I of an SBIR Program and that has received more than 15 Phase II SBIR awards during the preceding 5 FYs must document the extent to which it was able to secure Phase III funding to develop concepts resulting from previous Phase II SBIR awards. In addition, the documentation must include the name of the awarding agency, date of award, funding agreement number, amount, topic or subtopic title, follow-on agreement amount, source and date of commitment and current commercialization status for each Phase II award.

(2) USDA shall collect and retain the information submitted under subparagraph (F)(1) at least until the General Accounting Office submits the report required under section 105 of the Small Business Research and Development Enhancement Act of 1992.

(G) Application Modification - DO NOT USE

At this time, this form may not be used with an application to the USDA SBIR program. If changes or additions need to be made to a submitted application, please contact the National Program Leader responsible for the topic area to which you submitted your original application for instructions.

(H) R&R Other Project Information

Information related to the questions on this form are dealt with in detail in section V(3) of the CSREES GRANTS.GOV Application guide (http://www.csrees.usda.gov/funding/grant_forms/electronic_app_guide.pdf).

Field 6 Project Summary/Abstract (PDF format only)

1 page

The technical abstract, limited to 250 words, should include a brief description of the problem or opportunity, project objectives, and a description of the effort. Anticipated results and potential commercial applications of the proposed research also should be summarized in the space provided. Please note: **The project summary/abstract of successful proposals may be published by USDA and, therefore, should not contain proprietary information.**

Field 7 Project Narrative (Formerly Technical Content) (PDF format only)

Phase I: 16 pages; Phase II 32 pages

(1) Response to Previous Review – This is only required if you are submitting a proposal in which the project described was previously submitted to the SBIR program but not funded. Please provide a clear statement acknowledging comments of the previous review, indicating revisions, rebuttals, etc. This response is a critical part of the evaluation criteria as noted in subsection 4.3(F). Furthermore, the revised proposal should clearly indicate the changes that have been made in the project. Make sure to include the proposal number of the previous submission at the top of this section.

(2) Responsiveness to USDA SBIR Program Priorities – Please indicate if the proposal has a connection to agriculturally-related manufacturing technology, bioterrorism, or alternative and renewable energy (see section 8.0). Provide a brief explanation of how the proposal is related to the area indicated.

(3) Prior USDA Support – USDA is interested in documenting any examples of SBIR projects that are attempting to develop new technologies that are based on earlier USDA-supported research and development projects awarded to the proposing small business or to university or government scientist collaborators by other USDA research and development programs such as the National Research Initiative (NRI). If any such connection exists, it should be documented in this section by listing the PD, proposal title, organization that received the award, and the USDA program that awarded the project.

(4) Identification and Significance of the Problem or Opportunity – Clearly state the specific technical problem or opportunity addressed and its importance.

(5) Background and Rationale – Indicate the overall background and technical approach to the problem or opportunity and the part that the proposed research plays in providing needed results. As a part of this section, it is critical that proposals adequately cite relevant scientific literature. **Moreover, all citations**

provided must be properly referenced in the Bibliography & References Cited References attachment (see 3.3(H) – Field 8 below).

(6) Relationship with Research or Research and Development

Phase I – Discuss the significance of the Phase I effort in providing a foundation for the Phase II R&D effort. State the anticipated results of the approach if the project is successful. This should address: (a) the technical, economic, social, and other benefits to the Nation and to users of the results such as the commercial sector, the Federal Government, or other researchers; (b) the estimated total cost of the approach relative to benefits; and (c) any specific policy issues or decisions which might be affected by the results.

Phase II – Discuss the results of the Phase I project. Include a discussion of the overall background of the Phase I project, a list of the Phase I technical objectives, a presentation of a detailed description of the Phase I results, a clear interpretation of the results, and conclusions as to the feasibility of the project. This section is where the Phase II applicant establishes technical feasibility by presenting results from Phase I. Therefore, this section should provide an adequate discussion of Phase I results. The applicant should also state here the anticipated results of the proposed approach if the project is successful. **In Phase II proposals, this section should constitute a substantial portion of the project narrative.**

(7) Technical Objectives – State the specific objectives of the research or research and development effort. For Phase I, include the technical questions needed to establish the technical feasibility of the proposed approach.

(8) Work Plan – The work plan must provide an explicit, detailed description of the research or research and development approach. The plan should list the tasks to be performed, **provide details of the methodology that would be used to research each task**, including statistical analysis, if applicable, and indicate how and where the work will be carried out. The Phase I effort should attempt to determine the technical feasibility of the proposed concept. The work plan should be linked with the technical objectives of the research and the questions the effort is designed to answer. **This section should constitute a substantial portion of the project narrative.**

(9) Related Research or Research and Development – Describe significant research or R&D activities that are directly related to the proposed effort, including any conducted by the project director or by the proposing small business concern, how the proposed effort expands on the related work, and any planned coordination with outside sources. **The applicant must persuade reviewers that he or she is aware of related research in the selected subject.** It is critical that the applicant make a convincing case that the proposed research builds upon previous research and, if successful, will lead to the development of new technology or a substantial improvement of existing technology.

(10) Potential Post Application

Phase I – Briefly describe the commercialization potential of the proposed research in Phase I. In addition, indicate whether there appears to be a potential use of the proposed research by the Federal Government. Include a brief description of the proposing company (e.g., date founded, number of employees) and its field of interest. What are the major competitive products in this field, and what advantages will the proposed research have over existing technology (in application, performance, technique, efficiency or cost)?

Phase II – In Phase II commercialization potential is more important and thus a more extensive commercialization plan must be presented (see Section 3.3 (E)).

(11) Satisfying the Public Interest – Specify how the proposed research will satisfy one or more of the following USDA strategic goals: (more information can be found at www.usda.gov/ocfo/usdasp/usdasp.htm).

- (a) Enhance Economic Opportunities For Agriculture Producers.
- (b) Support Increased Economic Opportunities and Improved Quality of Life in Rural America.
- (c) Enhance Protection and Safety of the Nation's Agriculture and Food Supply.
- (d) Improve the Nation's Nutrition and Health.
- (e) Protect and Enhance the Nation's Natural Resource Base and Environment.

Field 8 Bibliography & References Cited References (PDF format only)

Provide a complete list of all references cited in the proposal. **For each reference, provide the complete name for each author, the year of the publication, the full title of the article, name of the journal or book published, volume, and the page numbers.** The references should be listed in alphabetical order using the last name of the first author.

Field 9 Facilities & Other Resources (PDF format only)

Describe the types, location, and availability of instrumentation and physical facilities necessary to carry out the work proposed. **If university facilities, private facilities, or government laboratories are being used, there must be a letter in the proposal from the authorized organizational representative of the university, private facility, or government laboratory describing the arrangement and testifying that the facilities will be subject to the exclusive use and control of the applicant.** This letter should be included as a part of Other Attachments (see Field 11 below).

Field 10 Equipment Documentation (PDF format only)

Describe the types, location, and availability of equipment necessary to carry out the work proposed. Items of equipment to be purchased must be fully justified under this section. When purchasing equipment or a product under the SBIR funding agreement, the small business should purchase only American-made items whenever possible. Please note: requests to purchase equipment should normally not exceed 10% of the budget for Phase I.

Field 11 Other Attachments (PDF format only)

Additional documentation that may be required for your proposal should be grouped in this section.

(1) Outside Services - Involvement of university, government, or other outside personnel in the planning and research stages of the project as consultants or through subcontracting arrangements is permitted and may be particularly helpful to small business firms that have not previously received Federal research awards. Establishment of a Cooperative Research and Development Agreement (CRADA) with a USDA laboratory or other Federal laboratory may also be beneficial to proposing firms. If the proposal involves outside consultants, subcontracts or involvement with a CRADA partner, these arrangements should be described in detail. Include a brief resume and listing of relevant publications for each consultant and subcontractor. **Proposals must include letters from proposed consultants, subcontractors or CRADA**

cooperators indicating their willingness to serve in order for such participation to be considered during the proposal review and evaluation process (see subsection 4.3(C) or 4.5(E), as appropriate).

(2) Letters of Support – General letters of support from potential end-users of your technology or from individuals/organizations that want to express support for your proposal.

(3) Use of Facilities or Equipment – A letter from a university or government laboratory describing the arrangement if university facilities or government laboratories are being used (see Field 9 above).

(4) Duration Exceeds Normal Project Period – The proposed duration of Phase I projects should normally not exceed 8 months, except in special, justified circumstances, and the duration of Phase II projects should normally not exceed 24 months. Where a proposed research project requires more than 8 months to complete in Phase I, a longer project period, not to exceed 20 months, may be considered. An applicant of a Phase I project with an anticipated duration beyond 8 months should specify and justify the length of duration in the proposal at the time of its submission to USDA in order for it to be considered.

(5) Follow-on Funding Agreements (Phase II only) – The USDA does not require Phase III follow-on funding commitments, but the PD is strongly encouraged to seek such a commitment. Any such agreement should be included in the Phase II proposal to be given full consideration during the review process. If an applicant is unable to secure a follow-on funding agreement prior to submitting their Phase II proposal but is able to obtain an agreement shortly thereafter, please contact the National Program Leader responsible for your program (see section 8.0) concerning the possibility of submitting this information to the USDA SBIR office.

(6) Applicant is a Subsidiary – A potential grantee that is a subsidiary must show that the parent company is also a small business entity and the parent company must provide documentation supporting their small business status

(I) R&R Key Person Profile(s) (PDF format only)

Information related to the questions on this form are dealt with in detail in section V(4) of the CSREES GRANTS.GOV Application guide
(http://www.csrees.usda.gov/funding/grant_forms/electronic_app_guide.pdf).

(1) Biographical Sketch (Vitae)

Identify key personnel of the small business concern, project consultants and subcontractors and include information on their directly related education and experience or a current copy of their vitae. The vitae should be limited to two (2) pages each in length, excluding publications listings. The vitae should include a presentation of academic and research credentials, as applicable; e.g., earned degrees, teaching experience, employment history, professional activities, honors and awards, and grants received. A chronological list of the most important and/or relevant publications in refereed journals during the past four (4) years, including those in press, must be included. Also, list only those non-refereed technical publications that have relevance to the proposed project. All authors should be listed in the same order as they appear on each paper cited, along with the title and complete reference as these usually appear in journals.

(2) Current and Pending Support

A current and pending support list should be included for all PD/PIs. Please note that the project being proposed should be identified as pending in the attached document. An application that duplicates or

overlaps substantially with an application already reviewed and funded (or to be funded) by another organization or agency will not be funded

If an identical proposal or one containing a significant amount of essentially equivalent work as the one submitted in response to this solicitation, has been previously funded or is currently funded, pending, or about to be submitted to another Federal agency or to USDA in a separate action, the applicant must provide the following information:

- (1) Name and address of the agency(s) to which a proposal was submitted, or will be submitted, or from which an award is expected or has been received.
- (2) Date of actual or anticipated proposal submission or date of award, as appropriate.
- (3) Title of proposal or award, identifying number assigned by the agency involved, and the date the proposal was submitted or the award was received.
- (4) Applicable research topic area for each proposal submitted or award received.
- (5) Name and title of project director for each proposal submitted or award received

(J) R&R Personal Data

Social Security Number - This is not a required field on this form. To protect the confidentiality of the Project Director (PD), we request that you do not list the PD's Social Security number on this form or in any other location in the proposal.

(K) R&R Budget (PDF format only)

Complete this form for the phase under which you are currently applying. (An applicant for Phase I funding should not submit both Phase I and Phase II budgets.) A Research and Related Budget form must be completed for each year (or partial year) for which work is proposed. **Normally, a Phase I project will require forms for one budget period and a Phase II project will require forms for two budget periods.**

Fields C1-C11. Equipment - Performing organizations are expected to have appropriate facilities, suitably furnished and equipped. However, funding for items of equipment may be requested provided that they are specifically identified with the dollar amount and adequately justified (see Field K of the R&R Budget).

Field D2. Foreign Travel Costs - Requests for foreign travel are discouraged but may be approved (e.g., proposals submitted to the Marketing and Trade topic area that are focused on export issues) based on the justification provided in the proposal. In the budget justification, provide the purpose, the destination, method of travel, number of persons traveling, number of days, and estimated cost for each trip. If details of each trip are not known at the time of proposal submission, provide the basis for determining the amount requested.

Field K. Budget Justification (Formerly Budget Narrative)

A budget justification with supporting detail for each budget category as noted in items (1) through (5) of this subsection must be included. **A budget justification is required for each entity for which a Research and Related Budget Form is submitted; however the budget justification can aggregate the budget for both years of the proposed project.**

(1) Salaries and Wages - Indicate the number and kind of personnel for whom salary support is sought, including job tasks. For key personnel, also indicate the number of work months of involvement to be

supported with USDA funds (see section labeled “CSREES Funded Work Months”), and explain how the level of compensation was established (e.g., the hourly rate of pay, the monthly rate of pay, or the yearly rate of pay).

(2) Equipment - Performing organizations are expected to have appropriate facilities, suitably furnished and equipped. However, funding for items of equipment may be requested provided that they are specifically identified with the dollar amount and adequately justified (see Field K of the R&R Budget), **but such requests should normally not exceed 10% of the budget for Phase I.** This limit does not apply to Phase II budgets; however, **Phase II equipment purchases must be adequately justified.** Equipment is defined as an article of nonexpendable, tangible personal property having a useful life of more than 1 year and an acquisition cost of \$5000 or more per unit. Awardees are usually allowed to retain title to equipment purchased with funding provided under an SBIR funding agreement. However, in some instances, USDA may direct the awardee to vest title to a third party. **Awardees should plan to lease expensive equipment.** The inclusion of equipment will be carefully reviewed with respect to need and appropriateness for the research proposed.

(3) Materials and Supplies - The types of expendable materials and supplies required should be indicated in general terms with estimated costs.

(4) Travel - The type and extent of travel and its relationship to the project should be specified. Funds may be requested for field work or for travel to professional meetings. Requests for foreign travel are discouraged but may be approved (e.g., proposals submitted to the Marketing and Trade topic area that are focused on export issues) based on the justification provided in the proposal. In the budget justification, provide the purpose, the destination, method of travel, number of persons traveling, number of days, and estimated cost for each trip. If details of each trip are not known at the time of proposal submission, provide the basis for determining the amount requested.

(5) All Other Direct Costs - Other anticipated direct costs not included above should be itemized. Examples include, but are not limited to, subcontracts and consultants. See Field 11 for required documentation associated with subcontracts and consultants. A budget and budget justification stating subcontractual and consulting costs and the rationale for the amount of the costs is required.

(6) Fee - A reasonable fee, not to exceed 7% of total Federal funds awarded (.07527 of total Direct and F&A/Indirect Costs) is permitted under this program solicitation but applicants are encouraged to minimize fee requests due to the small amount of funds available. **All fees are subject to negotiation with USDA.** If a fee is requested, the amount should be indicated in Field J “Fee” on the R&R Budget.

(7) Indirect Costs - If available, the current rate negotiated with the cognizant Federal negotiating agency should be used. Indirect costs may not exceed the negotiated rate. If a negotiated rate is used, the percentage and base should be indicated in the space allotted in item H of the budget sheet. If no rate has been negotiated, a reasonable dollar amount in lieu of indirect costs may be requested, which will be subject to approval by USDA. In the latter case, if a proposal is recommended for funding, an indirect cost rate proposal must be submitted to support the amount of indirect costs requested. CSREES will request an indirect cost rate proposal and provide instructions, as necessary. An applicant may elect not to charge indirect costs and, instead, use all grant funds for direct costs. If indirect costs are not charged, the phrase “None requested” should be written in this space.

(8) Cost Sharing - Cost sharing is permitted for proposals under this program solicitation; however, cost sharing is not required nor will it be an evaluation factor in considering the competitive merit of proposals submitted.

4.0 METHOD OF SELECTION AND EVALUATION CRITERIA

4.1 Introduction

All Phase I and II proposals will be evaluated on a competitive basis. Proposals will be initially screened to determine responsiveness to the RFA. Proposals passing this initial screening will be evaluated by technical reviewers to determine those proposals with the highest scientific and technical merit. Each proposal will be judged on its own merits. In Phase II, additional reviewers will be assigned to evaluate the required commercialization plan. **Proposals received outside of the solicitation period or proposals not responding to research topic areas outlined in section 8.0 of this program solicitation are not eligible to be considered for a Phase I SBIR award and, hence, will be returned to the proposing small business firm without review.**

External peer reviewers will be used during the technical evaluation stage of this process. Selections will be made from among recognized specialists who are uniquely qualified by training and experience in their respective fields to render expert advice on the merit of proposals received. It is anticipated that these experts will be drawn from universities, Government, and non-profit research organizations. If possible, USDA intends that peer review groups shall be balanced with minority and female representation and with an equitable age distribution.

Final decisions will be made by USDA based upon the ratings assigned by reviewers and consideration of other factors, **including the potential commercial application**, possible duplication of other research, any critical USDA requirements, program balance, budget limitations and, for Phase II proposals only, any follow-on funding commitment. There is no commitment by USDA to fund any particular proposal, to support any specific number of proposals in a given research topic area, or to make a specific number of awards under either Phase I or Phase II. USDA also may elect to fund several or none of the proposed approaches to the same topic. Care will be taken to avoid actual and potential conflicts of interest among reviewers. Evaluations will be confidential to USDA staff members, peer reviewers, and the proposed project director, to the extent permitted by law.

4.2 Initial Screening Criteria

To avoid misunderstanding, applicants should be aware that proposals not satisfying all of the screening criteria may be returned to the proposing entity without review. Returned proposals may not be resubmitted (with or without revision) under this solicitation. The initial screening criteria are the following:

- (A) The proposing firm must qualify as a small business concern as defined in subsection 2.11.
- (B) The proposal must meet the Proposal Content and Format requirements as described in subsection 3.3.
- (C) Proposals must be limited to one research problem (see subsection 3.1).
- (D) The proposed budget must be within the dollar limit identified in subsection 1.2.

(E) If proposed duration of Phase I project exceeds 8 months or Phase II project exceeds 24 months, justification must be provided (see subsection 3.3(H)).

(F) Proposals must cover scientific research activities only (see subsection 3.1).

(G) The proposed Phase I research must fall within a solicited topic area. (See section 8.0 for the listing of topic area descriptions.)

(H) A proposal must contain adequate scientific/technical information to state clearly the research plan and objectives. USDA reserves the right not to submit for review any proposal which it finds to have insufficient scientific/technical information.

(I) A resubmitted proposal must address concerns of the previous review panel. USDA reserves the right not to submit for review any proposal found not to be responsive to the previous review.

(J) Is it clear that the project director will work a minimum of 51 percent of his/her time for the small business firm during the period of the grant and that the small business firm will conduct a minimum of two-thirds of the research effort?

4.3 Phase I Evaluation Criteria

USDA plans to select for award those proposals offering the best value to the Nation. The primary evaluation criteria used by reviewers are listed below. Approximately equal consideration will be given to each criterion, **except for item (A) which will receive twice the value of any of the other items (including item (F), if applicable):**

(A) Scientific and Technical Feasibility: Is there a thorough background section with an up-to-date literature review? Are the stated objectives logical and will they lead toward proving the technical feasibility of the approach or concept? Does the research plan offer an original and innovative approach to the problem and sufficient detail to indicate how each research objective will be investigated? Can the research plan reasonably be completed in the requested grant period?

(B) Importance of the Problem: Does the proposal provide sufficient justification for the importance of the problem and clearly indicate the anticipated commercial potential of the proposed research? Is the proposed project in the public interest by satisfying one or more of the strategic goals objectives listed in subsection 3.3(H)(item (11) of Field 7)?

(C) Investigator and Resource Qualifications: Is adequate bibliographic information provided to document that the project director, other key staff, and any consultants have the appropriate training and experience to carry out the proposed research plan? If consultants, subcontractors, or CRADA cooperators are involved in the project are letters from these individuals included in the proposal verifying their willingness to participate in the research study, their rates of pay, and any other budgetary information? Are adequate research facilities available that the small business firm either owns or controls for the duration of the grant? Is adequate instrumentation available for the proposed research plan?

(D) Budget: Is the budget appropriate for the proposed research plan? Is sufficient budget detail, including subcontract, consultant and CRADA data, provided to indicate clearly how the funds would be utilized?

(E) Duplication: Does the proposed research substantially duplicate any ongoing or previous research by the small business firm or by other researchers? Does the proposal clearly indicate how the proposed technology would differ significantly from existing technology? If the small business firm or a consultant has received or applied for patent(s) pertaining to the proposed technology, does the proposed research constitute a legitimate feasibility study?

(F) Resubmission: If the proposal is a resubmission, did the applicant provide a “Response to Previous Review?” Were the responses to the previous year’s panel summary appropriate (Refer to subsection 3.3(H) (item (1) of Field 7)?

(G) Commercial Potential: Applicants should describe previous commercialization of SBIR or other research. Applicants should indicate any second phase funding commitments from private sector or non-SBIR funding sources. Applicants should also indicate any other commercial potential factors.

Additional factors that will be considered in the review process are whether a proposal involves a CRADA with a USDA laboratory or is a resubmission. In the event that two or more proposals are of approximately equal merit, the existence of a CRADA with a USDA laboratory will be an important consideration. If one proposal is a resubmission, this will also be an important consideration.

4.4 Phase I Review Process

USDA uses confidential peer review as the basis for evaluating all Phase I proposals. There are separate review panels corresponding to each of the topic areas listed in Section 8.0. Reviewers are drawn primarily from universities, government, and non-profit research organizations. For each topic area a leading research scientist is appointed as a topic manager. In consultation with the SBIR program staff, this individual appoints a review panel. The review panel meets in Washington, D.C., to evaluate all proposals. Proposals are reviewed both by members of the review panel and by ad hoc reviewers with specific expertise appropriate for each proposal. The panel discusses each proposal carefully and then ranks the proposals. The panel rankings are used in determining which proposals are funded.

Considerable effort is made to ensure that the review process is confidential. Reviewers are instructed to handle all proposals in complete confidence and each reviewer is provided written guidelines to follow. All reviewers are also obligated to certify that they will maintain confidentiality at the time they prepare a review and submit it through the Agency's electronic Peer Review System.

Every effort is made to avoid even the appearance of a conflict-of-interest (COI). The USDA has very detailed rules on COI that are followed during the review process. If a panel member has a COI on a proposal, he/she will not review the proposal and will be excused from the panel meeting while the particular proposal is being discussed. USDA is committed to ensuring the review process is fair and is handled with confidence.

4.5 Phase II Evaluation Criteria

Only awardees in Phase I are eligible to participate and submit a Phase II proposal. This includes those awardees identified via a “novated” or “successor-in-interest” revised funding agreement. The primary evaluation criteria used by reviewers are listed below and except for items (B and C) are largely identical to those for Phase I. Approximately equal consideration will be given to each criterion, **except for items (A), (B), and (C) which will receive twice the value of any of the other items:**

(A) Scientific and Technical Feasibility: Is there a thorough background section with an up-to-date literature review? Are the stated objectives logical and appropriate for a two year research and

development period? Does the research plan offer an original and innovative approach to the problem and sufficient detail to indicate how each research objective will be investigated?

(B) Degree to Which Phase I Objectives were Met and Technical Feasibility Established: Are the Phase I objectives clearly stated and Phase I results presented in sufficient detail to permit a reviewer to determine whether the objectives were fully met and technical feasibility clearly established?

(C) Commercial Potential: A separate Commercialization Plan (see Section 3.3(E)) is required. The commercial potential will be assessed using the following:

- (1) Company information;
- (2) Market information (need, size, potential customers, competition, etc.);
- (3) Strategy for commercializing this product/technology/service (including second phase and third-phase follow-on commitments from private sector or non-SBIR funding sources);
- (4) Plans for protection of intellectual property;
- (5) Projected revenue stream and assumptions; and
- (6) Record of commercializing new products and/or services during the last 5 years, especially from prior SBIR and STTR projects.

A company Commercialization Plan showing that the proposing firm has no prior Phase II awards will not affect the firm's ability to win an award. Such a firm's proposal will be evaluated for commercial potential based on its commercialization strategy.

(D) Importance of the Problem: Does the proposal provide sufficient justification for the importance of the problem? Is the proposed project in the public interest by satisfying one or more of the strategic goals listed in subsection 3.3(H) (item (11) of Field 7)?

(E) Investigator and Resource Qualifications: Is adequate bibliographic information provided to document that the project director, other key staff, and any consultants have the appropriate training and experience to carry out the proposed research plan? If consultants, subcontractors, or CRADA cooperators are involved in the project are letters from these individuals included in the proposal verifying their willingness to participate in the research study? Are adequate research facilities available that the small business firm either owns or controls for the duration of the grant? Is adequate instrumentation available for the proposed research plan?

(F) Budget: Is the budget appropriate for the proposed research plan? Is sufficient budget detail provided to indicate clearly how the funds would be utilized?

(G) Duplication: Does the proposed research substantially duplicate any ongoing or previous research by the small business firm or by other researchers? Does the proposal clearly indicate how the proposed technology would differ significantly from existing technology? If the small business firm or a consultant has received or applied for patent(s) pertaining to the proposed technology, does the proposed research constitute a legitimate feasibility study?

Additional factors that will be considered in the review process are whether a proposal involves a CRADA with a USDA laboratory or contains a follow-on funding commitment for Phase III. In the event that two or more proposals are of approximately equal merit, the existence of a CRADA with a USDA laboratory will be an important consideration. The existence of a follow-on funding commitment for continued development in Phase III will also be an important consideration. The value of any commitment will depend upon the degree of financial commitment made by non-Federal investors, with

the **maximum value resulting from a signed agreement with reasonable terms for an amount at least equal to the funding requested from USDA in Phase II.**

4.6 Phase II Review Process

USDA uses confidential peer review as the basis for evaluating all Phase II proposals. Reviewers are drawn primarily from universities, government, and non-profit research organizations. As there are far fewer proposals at Phase II, the review process is handled on an entirely ad-hoc basis. Each proposal will be reviewed by 4 to 6 ad hoc reviewers for technical merit, as well as by at least 2 “commercialization” experts, who will be requested to provide reviews of each proposal’s commercialization plan. A proposal is not sent to a reviewer unless he/she agrees to review the proposal in strict confidence. In addition, reviewers are required to certify electronically through our Peer Review System (PRS) that they agree to the COI and Confidentiality guidelines. The same COI rules used in the Phase I are used for Phase II and no individual is sent a proposal where even the appearance of a COI exists.

4.7 Notice to Applicants

Technical reviewers will base their conclusions and recommendations on information contained in the proposal. It cannot be assumed that reviewers are acquainted with any experiments referred to within a proposal, with key individuals, or with the small business firm itself.

After final decisions have been announced, a panel summary that briefly sets forth the main strengths and weaknesses of the proposal, plus written reviews of the proposal, will be sent to the proposed project director. The reviews will not include the scores nor the identities of the reviewers. Due to funding limitations and USDA’s desire to support as many worthwhile projects as possible, it may be necessary for USDA to reduce the amount of an award below the amount requested by a small business (or to fund only certain objectives outlined in the proposal). Any significant changes will be discussed with the proposing firm, which may then be asked to submit a revised budget reflecting the reduced amount. In the event that this occurs, specific instructions will be provided to the applicant.

5.0 CONSIDERATIONS

5.1 Awards

USDA expects to make approximately 100 Phase I awards ranging up to \$80,000 each to small businesses in FY 2007, depending upon the availability of funds. Awards are expected to be made on or before May 1, 2007. USDA will announce the names of those concerns receiving awards, and successful applicants will then normally have 8 months after awards are made to carry out their proposed Phase I effort.

USDA expects to make approximately 35 Phase II awards ranging up to \$350,000 each to previous USDA Phase I awardees, depending upon the results of the Phase I efforts, the scientific and technical merit of the Phase II proposal, and the availability of funds.

In accordance with the guidelines contained in 31 U.S.C. 6301-6308, and the authority contained in Section 630 of the Act making appropriations for Agriculture, Rural Development, and Related Agencies’ programs for fiscal year ending September 30, 1987, and for other purposes, as made applicable by Section 101(a) of Public Law Number 99-591, 100 Stat. 3341, **all Phase I and Phase II awards will be issued as research grants.**

A reasonable fee, not to exceed 7% of total Federal funds awarded (.07527 of total direct and F&A/indirect costs) is permitted under this program solicitation but applicants are encouraged to minimize fee requests due to the small amount of funds available. All fees are subject to negotiation with USDA. If a fee is requested, the amount should be indicated in Field J. Research and Related Budget.

5.2 Reports

(A) Technical Reports

For both Phase I and Phase II a brief interim progress report must be submitted at approximately the mid-point in the project. In addition, a comprehensive final technical report must be submitted within 30 days following expiration of the Phase I grant and within 90 days following expiration of the Phase II grant. These reports should be submitted electronically as an attachment (MS Word or PDF) to the following email address: sbir@csrees.usda.gov. **The report should include a single-page executive summary as the first page.** This summary should include the purpose of the research, a brief description of the research carried out, the research findings or results, and, in a final paragraph, potential applications (commercial or other) of the research. The balance of the report should include a comparison of actual accomplishments with the goals established for the grant; the reasons for slippage if established goals were not met; estimates of technical feasibility; and additional pertinent information such as an explanation of cost over-runs or unexpectedly high unit costs. Also, identify all other recipients (public and private) of the research results documented in the Phase I or Phase II report.

Please note: technical reports are held confidential for a period covering four years after the termination of the project. As such, proprietary information may be included in these reports when necessary to provide the USDA SBIR National Program Staff adequate information to evaluate the progress and/or outcome of the project.

(B) Financial Reports

A final “**Financial Status Report**” (SF-269) is due within 90 days after the expiration date of the grant and should be submitted to the Funds Management Branch, Office of Extramural Programs at the address listed below, in accordance with instructions contained in Section 3015.82 of the Uniform Federal Assistance Regulations.

Funds Management Section
Office of Extramural Programs
Cooperative State Research, Education,
and Extension Service
U.S. Department of Agriculture
STOP 2298
1400 Independence Avenue, S.W.
Washington, D.C. 20250-2298
Telephone: (202) 401-4527

Quarterly Reports of Federal Cash Transactions (SF-272) are required by DHHS (www.dpm.psc.gov) and are submitted online through the DHHS-PMS website. If you become delinquent in these reports, you will not be able to access your funds.

(C) CRIS Reports

All Phase I and Phase II awardees are required to submit the AD-416 and AD-417 CRIS (Current Research Information System) report forms before a project can be awarded. In addition, the AD-419 and AD-421 report form has to be submitted at the conclusion of a Phase I project as a termination report. For Phase II the AD-419 and AD-421 report form is submitted after the first year as a progress report and at the end of the project as a termination report. Additional information about CRIS will be provided to all awardees prior to the start of their award. The online portal to all CRIS reports is located at <http://cwf.uvm.edu/cris>.

Please note: CRIS reports are meant to provide information about USDA SBIR grants to the general public through the online CRIS database. As such, proprietary information should not be included in these reports.

(D) Data Collection Requirement – Phase II

(A) Each Phase II applicant will be required to provide information to the SBA Tech-Net Database System once it becomes functional. The following are examples of the data to be entered by applicants into Tech-Net:

- (1)** Any business concern or subsidiary established for the commercial application of a product or service for which an SBIR award is made.
- (2)** Revenue from the sale of new products or services resulting from the research conducted under each Phase II award;
- (3)** Additional investment from any source, other than Phase I or Phase II awards, to further the research and development conducted under each Phase II award;
- (4)** Update the information in the Tech-Net database for any prior Phase II award received by the small business concern. The small business concern may apportion sales or additional investment information relating to more than one Phase II award among those awards, if it notes the apportionment for each award.

(B) Upon completion and submission of the final technical report (see section 5.2), each Phase II awardee will be required to update the appropriate information on the award in the Tech-Net database and will be requested to voluntarily update the information in the Tech-Net database annually thereafter for a minimum period of 5 years.

5.3 Payment Schedules

Payments will be made by electronic funds transfer through the Department of Health and Human Services' Payment Management System (DHHS-PMS). Requests for payment should be in accordance with DHHS-PMS instructions. All questions relating to payments should be submitted to:

Funds Management Section
Office of Extramural Programs
Cooperative State Research, Education, and Extension Service
U. S. Department of Agriculture
STOP 2298
1400 Independence Avenue, S. W.
Washington, D. C. 20250-2298
Telephone: (202) 401-4527
Facsimile: (202) 401-3481

Drawdown instructions will be sent to the awardee under separate cover. Payments shall be made according to the following schedule:

(A) Aggregate payment requests of up to 50% of total award dollars will be honored during the first half of the project.

(B) Upon acceptance of the interim progress report, up to an additional 35% of total dollars will become available for support of the project.

(C) The final 15% of total award dollars will be paid upon receipt and acceptance of the comprehensive final technical report required under section 5.2 above.

If the awardee is a sole proprietorship, funds awarded shall be deposited in a separate bank account and CSREES, through the authorized departmental officer (ADO) agreement officer, shall be informed of the name and location of the bank. In addition, arrangements must be reached between the awardee and the bank of deposit of the award funds in accordance with the following: The account must be of a nature that permits the bank of deposit to return unused funds remaining in that account to CSREES in the event of the awardee's demise. However, CSREES shall not be named a joint owner of such an account, but rather as beneficiary. These arrangements must also be reported to CSREES through the Authorized Departmental Officer.

5.4 Proprietary Information

Information contained in unsuccessful proposals will remain the property of the applicant. The Government may, however, retain copies of all proposals. Public release of information in any proposal submitted will be subject to existing statutory and regulatory requirements. If proprietary information is provided by an applicant in a proposal, which constitutes a trade secret, proprietary commercial or financial information, confidential personal information, or data affecting the national security, it will be treated in confidence, to the extent permitted by law. This information must be clearly marked by the applicant with the term "confidential proprietary information" and the following legend must appear on each PDF attachment submitted as a part of the proposal: "These data shall not be disclosed outside the Government and shall not be duplicated, used, or disclosed in whole or in part for any purpose other than evaluation of this proposal. If a funding agreement is awarded to this applicant as a result of or in connection with the submission of these data, the Government shall have the right to duplicate, use, or disclose the data to the extent provided in the funding agreement and pursuant to applicable law. This restriction does not limit the Government's right to use information contained in the data if it is obtained from another source without restriction. The data subject to this restriction are contained on pages ___ of this proposal."

Any other legend may be unacceptable to the Government and may constitute grounds for removing the proposal from further consideration without assuming any liability for inadvertent disclosure. The Government will limit dissemination of such information to within official channels.

USDA, by law, is required to make the final decision as to whether the information is required to be kept in confidence. Information contained in unsuccessful proposals will remain the property of the applicant. However, USDA will retain for three years one file copy of all proposals received; extra copies will be destroyed. Public release of information for any proposal submitted will be subject to existing statutory and regulatory requirements. The legislation reauthorizing the SBIR Program strengthened the protection of awardee firms relative to maintaining confidentiality of proprietary information for a period of four years after the end of the grant period. However, any proposal which is funded will be considered an

integral part of the award and normally will be made available to the public upon request through the Freedom of Information Act, except for designated proprietary information.

The inclusion of proprietary information is discouraged unless it is necessary for the proper evaluation of the proposal. If proprietary information is to be included, it should be limited, set apart from other text on a separate page, and keyed to the text by numbers. It should be confined to a few critical technical items which, if disclosed, could jeopardize the obtaining of foreign or domestic patents. Trade secrets, salaries, or other information which could jeopardize commercial competitiveness should be similarly keyed and presented on a separate page. Proposals or reports which attempt to restrict dissemination of large amounts of information may be found unacceptable by USDA.

5.5 Rights in Technical Data

Rights in technical data, including software developed under the terms of any funding agreement resulting from a proposal submitted in response to this solicitation, shall remain with the grantee. However, the Government shall have the limited right to use such data for Governmental purposes and shall not release such data outside the Government without permission of the grantee for a period of four years from completion of the project under which the data were generated. Effective at the conclusion of the four-year period, the Government shall retain a royalty-free license for Governmental use of any technical data delivered under the agreement, whether patented or not.

5.6 Copyrights

With prior written permission of the Authorized Departmental Officer, the grantee normally may copyright and publish (consistent with appropriate national security considerations, if any) material developed with USDA support. USDA receives a royalty-free license for the Federal Government and requires that each publication contain the following acknowledgment and disclaimer statement:

“This material is based upon work supported by the U.S. Department of Agriculture under Grant No. (awardee should enter agreement number here). Any opinions, findings, and conclusions or recommendations expressed in this publication are those of the author(s) and do not necessarily reflect the views of the U.S. Department of Agriculture.”

The last sentence may be omitted from articles published in scientific journals.

5.7 Patents and Inventions

Allocation of rights to inventions shall be in accordance with 35 U.S.C. 202-206 and the Department of Commerce implementing regulations entitled “Rights to Inventions Made by Nonprofit Organizations and Small Business Firms under Government Grants, Contracts and Cooperative Agreements” at 37 CFR Part 401. These regulations provide that small businesses normally may retain the principal worldwide patent rights to any invention developed with USDA support. USDA receives a royalty-free license for Federal Government use, reserves the right to require the patentee to license others in certain circumstances, and requires that anyone exclusively licensed to sell the invention in the United States must normally manufacture it domestically. To the extent authorized by 35 U.S.C. 205, USDA will not make public any information disclosing a USDA-supported invention for a four-year period to allow the grantee a reasonable time to file an initial patent application. Additional information may be obtained by contacting:

Director, Planning and Accountability
Cooperative State Research, Education, and Extension Service, USDA
STOP 2213
1400 Independence Avenue, S.W.
Washington, D.C. 20250-2213
Telephone: (202) 720-5623
Facsimile: (202) 720-7714
E-mail: rmacdonald@csrees.usda.gov

SBIR awardees must report inventions to the awarding agency within two months of the inventor's report to the awardee. The reporting of inventions must be made through submission to Interagency Edison (www.iedison.gov). Specific instructions for invention reporting are contained in the agency's terms and conditions, a copy of which can be provided upon request.

5.8 Research Involving Special Considerations

A number of situations frequently encountered in the conduct of scientific research require the submission of special information for a particular project. Since some types of research targeted for SBIR support have high probability of involving human subjects at risk or vertebrate animals, special instructions follow:

If the proposed research will involve human subjects at risk or vertebrate animals, the proposal must so indicate by checking "Yes" on the R&R "Other Project Information". Further, in the event that the project is funded, the applicant may be required to have the research plan reviewed and approved by the appropriate review board or committee. It is suggested that applicants contact local universities, colleges, or nonprofit research organizations which have established such reviewing mechanisms to have this service performed.

Guidelines to be applied and observed when conducting such research are outlined below.

(A) Human Subjects at Risk - Regulations issued by the Department of Agriculture to be used in safeguarding the rights and welfare of human subjects used in research supported with USDA grant funds are contained in 45 CFR Part 46 and USDA regulations set forth in 7 CFR part 1c. All nonexempt research projects involving human subjects must be approved by an Institutional Review Board prior to commencing actual substantive work.

(B) Animal Care - The performing organization must comply with the Animal Welfare Act (7 U.S.C., 2131-2156); Public Law 89-544, 1996, and the regulations issued by the Department of Agriculture in 9 CFR parts 1, 2, 3, and 4. In the case of domesticated farm animals housed under farm conditions, the grantee must adhere to the principles stated in the Guide for the Care and Use of Agricultural Animals in Agricultural Research and Teaching, Federation of Animal Sciences Societies, 1999. In the event a project involving the use of living vertebrate animals results in a grant award, funds will be released only after a qualified Institutional Animal Care and Use Committee has approved the project.

5.9 Grantee Commitments

Upon issuance of a research grant by USDA, the awardee will be required to make certain legal commitments through acceptance of the award document and the terms and conditions attached thereto, as well as any project-specific terms or conditions outlined. Most of these terms and conditions are contained in USDA's Uniform Federal Assistance Regulations, 7 CFR Part 3015, which will be incorporated into all Phase I awards resulting from this program solicitation. These regulations primarily

consolidate internal policies and procedures relating to USDA's assistance programs and implement various Federally issued assistance policies, including applicable Federal cost principles and uniform administrative requirements. Copies are available at:
www.access.gpo.gov/nara/cfr/waisidx_04/7cfr3015_04.html.

5.10 Additional Information

(A) This program solicitation is intended for informational purposes and reflects current planning. If there is any inconsistency between the information contained herein and the terms of any resulting SBIR funding agreement, the terms of the funding agreement are controlling.

(B) Before the award of an SBIR funding agreement, USDA requires the submission of certain organizational management, personnel, and financial information to assure responsibility of the applicant, including certification that the proposing organization is in compliance with the Civil Rights Act of 1964. These forms will be provided to the small business concern by the Office of Extramural Programs, CSREES, prior to the forwarding of the funding agreement for acceptance. The information contained in both forms must normally be submitted on a one-time basis only. (If sufficient changes occur within the organization to warrant submission of new or additional information, additional forms should be requested by calling either (202) 401-5050 or (202) 401-4342.) It is anticipated that all Phase I awardees will be required to submit the above information, but Phase II awardees will be concerned primarily with submitting new forms only if they have undergone significant changes in organization, personnel, finance, or policies including those relating to civil rights. Phase II awardees will be asked to submit an updated statement of financial condition (such as the latest audit report, financial statement, or balance sheet).

(C) If an applicant or a grantee is contemplating any type of transaction involving the entity (i.e., merger, spin-off, or sale), it is advised that the applicant or the grantee contact one of the SBIR National Program Leaders (See subsection 1.5) for knowledge of how the transaction may affect a potential grant or the grant, as applicable.

(D) USDA is not responsible for any monies expended by the applicant prior to the award of any funding agreement.

(E) This program solicitation is not an offer by USDA and does not obligate USDA to make any specific number of awards. Also, awards under this program are contingent upon the availability of funds.

(F) Unsolicited proposals will not be accepted under the SBIR program in either Phase I or Phase II.

6.0 SUBMISSION OF PROPOSALS

6.1 When to Submit

All Phase I Proposals must be submitted via Grants.gov by 5:00 p.m. Eastern Time on September 1, 2006. Proposals received after this deadline will not be considered for funding.

All Phase II proposals must be submitted via Grants.gov by 5:00 p.m. Eastern Time on February 1, 2007. Proposals received after this deadline will not be considered for funding.

Normally, only those small businesses previously receiving Phase I awards in either fiscal years 2005 or 2006 are eligible to submit Phase II proposals in fiscal year 2007. At the appropriate time,

the SBIR Program will send a letter to Phase I awardees eligible to submit Phase II proposals with instructions for preparing these proposals and a deadline date.

For the convenience of all potential applicants, the following schedule is provided for informational purposes:

Phase I

Deadline date for proposals.....September 1, 2006

Period of research performance.....May 1, 2007 through December 31, 2007

Phase II

Deadline date for proposals.....February 1, 2007

Period of research performanceSeptember 1, 2007 through August 31, 2009

6.2 What to Submit

USDA SBIR electronic application submissions consist of forms (viewed, completed, and submitted through the Grants.gov PureEdge Viewer) and attachments. All of the necessary forms and instructions will be found on the Grants.gov website. Applicants can access the appropriate page on Grants.gov by visiting the USDA SBIR funding opportunity page at <http://www.csrees.usda.gov/fo/sbir>. Clicking on the Funding Opportunity Number listed near the bottom of the page will link the applicant directly to the information and forms necessary to submit through Grants.gov.

All attachments submitted with the proposal must be in portable document format (PDF). Reviewers will not be provided non-PDF files in the review process.

If you do not own PDF-generating software, Grants.gov provides online tools to assist applicants. On the Grants.gov Customer Support webpage (<http://grants.gov/CustomerSupport>) users will find a link to "Convert Documents to PDF" (<http://grants.gov/assets/PDFConversion.pdf>). PDF documents submitted as a part of the application must also adhere to the following guidelines:

- **margins not less than 1"; 2.5 cm all sides**
- **type at least 12 point font size regardless of whether it is single or double spaced.**

Proposals that do not follow the guidelines for attachments stated above will not be accepted into the program and will be returned without review.

Please note: Applicants must have successfully completed the entire registration process (see subsection 3.2) prior to being able to submit a proposal through Grants.gov.

6.3 Where to Submit

All FY2007 Proposals submitted to USDA SBIR must be submitted electronically through [Grants.gov](http://grants.gov).

6.4 Questions Pertaining to the USDA SBIR Program or to this Solicitation

Written or verbal questions of a general nature about the USDA SBIR program, as well as general questions pertaining to this solicitation (but not pertaining to requests for additional copies of the

solicitation), should be sent to sbir@csrees.usda.gov or can be directed to one of the USDA SBIR National Program Leaders (see section 8.0).

6.5 Requests for Copies of this Solicitation

Please note that this Program Solicitation is available through the USDA CSREES web page, www.csrees.usda.gov/funding/rfas/sbir_rfa.html. CSREES encourages the use of the electronic document. However, if necessary, paper copies of this solicitation may be ordered by calling (202) 401-5048.

These materials may also be requested via Internet by sending a message with your name, mailing address (not e-mail) and phone number to psb@csrees.usda.gov which states that you want a copy of the application materials for the Fiscal Year 2007 Small Business Innovation Research Grants Program. The materials will then be mailed to you (not e-mailed) as quickly as possible.

6.6 Information on Proposal Status

It is anticipated that the evaluation of Phase I proposals will require approximately 6 months from September 1, 2006, and no information on proposal status will be available until final selections have been made. Both successful and unsuccessful applicants will be notified of final award decisions within approximately 6 months.

Evaluation of **Phase II** proposals will require approximately four months from February 1, 2007. Again, applicants are discouraged from making inquiries regarding the status of their proposals. All proposing organizations will be notified of final award decisions within approximately 4 months.

7.0 SCIENTIFIC AND TECHNICAL INFORMATION SOURCES

Listed below are some of the sources that can provide technology search and document services which may be useful in preparing SBIR proposals. They can be contacted directly for service and cost information.

National Agricultural Library
Service Desk
U.S. Department of Agriculture
10301 Baltimore Avenue
Beltsville, MD 20705-2351
(301) 504-5755
www.nal.usda.gov

National Technology Transfer Center
Wheeling Jesuit University
316 Washington Avenue
Wheeling, WV 26003
(304) 243-2455 or (800) 678-6882
www.nttc.edu

National Technical Information Service
5285 Port Royal Road
Springfield, VA 22161
(800) 553-6847
www.ntis.gov

Current Research Information Center (CRIS)
USDA/CSREES/ISTM
1400 Independence Ave., S.W.
Stop 2270
Washington, D.C. 20250
<http://cris.csrees.usda.gov>

Regional Technology Transfer Centers

Far West
University of Southern California
3716 South Hope Street, Suite 200
Los Angeles, CA 90007-4344
(213) 743-2353
www.usc.edu/dept/engineering/TTC

Mid-Continent Technology Transfer Center
Texas Engineering Extension Service
The Texas A&M University System
301 Tarrow
College Station, TX 77843-8000
(979) 845-8762
Fax (979) 845-3559
www.teex.com

Midwest
Great Lakes Industrial Technology Center
25000 Great Northern Corporate Center
Suite 260
Cleveland, OH 44070
(216) 734-0094
www.glitec.org

Mid-Atlantic
TECC - the Technology Commercialization
Center
144 Research Drive
Hampton, VA 23666
(757) 766-9200
Fax (757) 766-2402
www.teccenter.org

Northeast
Center for Technology Commercialization
1400 Computer Drive
Westborough, MA 01581-5043
(508) 870-0042
www.ctc.org

Southeast
Georgia Institute of Technology
151 6th Street
216 O'Keefe Building
Atlanta, GA 30332
(404) 894-6786
www.edi.gatech.edu/nasa

8.0 RESEARCH TOPIC DESCRIPTIONS

SBIR proposals are solicited from a full range of topic areas. Specific subtopics are listed only as **examples** of advanced applications or applied research of interest to USDA and are **not to be interpreted as exclusive**. In some topic areas special emphasis is placed on certain subtopics and proposals are especially encouraged that address one of these subtopics. However, in every case, applicants are free to submit proposals on subjects not covered by one of the suggested subtopics so long as the proposal is responsive to the general area covered by the research topic area.

It is USDA's intention to provide sufficient flexibility to obtain the greatest degree of creativity and innovation possible, consistent with overall SBIR and USDA program objectives. USDA reserves the right to shift proposals to a more appropriate topic area when necessary for adequate review.

Proposals are encouraged that focus on the following issues.

Agriculturally-related Manufacturing Technology

On February 26, 2004 The President issued Executive Order 13329 (69 FR 9181) entitled "Encouraging Innovation in Manufacturing". In response to this Executive Order, USDA encourages the submission of proposals that deal with some aspect of agriculturally-related manufacturing technology (Section 2.17). Since manufacturing impacts all aspects of agriculture and rural development, proposals dealing with manufacturing could be submitted to any of the topic areas. If a proposal has a connection to manufacturing this should be indicated in R&R Other Project Information (Field 7(2)) and a brief explanation of how it is related to manufacturing should be provided.

Bioterrorism

Following the terrorist attacks on 9/11/01, there has been an increased awareness of the importance of combating bioterrorism and thus research on better ways to combat bioterrorism is a top priority for USDA. Bioterrorism can affect plant and animal agriculture, water quality and food security and thus proposals dealing with bioterrorism could be submitted to several different topic areas. If a proposal has a connection to bioterrorism this should be indicated in R&R Other Project Information (Field 7(2)) and a brief explanation of how it is related to bioterrorism should be provided.

Alternative and Renewable Energy

There is a growing realization that this country needs to reduce its dependence upon fossil fuels. USDA has established research on alternative and renewable energy as a high priority. Such research includes development of new energy crops, improved methods for producing biofuels such as ethanol and biodiesel, producing hydrogen and other fuel gases from agricultural waste, and more efficient use of energy in agricultural production and in rural communities. Energy issues impact all aspects of agriculture and rural development and thus proposals dealing with alternative and renewable energy could be submitted to many of the different topic areas. If a proposal has a connection to alternative and renewable energy this should be indicated in R&R Other Project Information (Field 7(2)) and a brief explanation of how it is related to alternative and renewable energy should be provided.

8.1 Forests and Related Resources

Investigators are encouraged to contact Dr. Charles Cleland, National Program Leader at (202) 401-6852 to arrange a telephone consultation regarding questions about the suitability of research topics (or at ccleland@csrees.usda.gov.)

(A) Scope of Research

The objective of this topic is to develop environmentally sound techniques to increase productivity of forest lands; to develop improved methods for harvesting trees; to protect forest lands from pathogens, insects and wildfires, and to develop new products or technologies to increase the use of wood.

(B) Suggested Subtopics

Examples of appropriate subtopics for research proposals from small businesses include, but are not limited to the following:

- (1) **Growth and yield** - Improving growing stock, tissue culture, genetic manipulation or vegetative reproduction of forest trees and other means of increasing the regenerative abilities of forests.

Reducing pathogens and insects - The volume of material lost to disease and insects exceeds that used for lumber and associated wood products. Subjects applicable here are those that reduce the impact of destructive agents.

Improving soil or reducing harvesting impacts - The fixing of nitrogen by symbiotic agents through genetic manipulation or by mycorrhizae to increase forest productivity through nitrogen enrichment of forest soils; research to reduce soil erosion, compaction, or other alterations caused by harvesting or forest operations (that is, physical improvement of forest soils).

Developing systems to increase the survival of newly planted trees through mechanical, physical, or chemical means that are environmentally safe.

- (2) **Increasing the utility of forest-grown material** - Improving lumber yield or other means of increasing the volume and worth of wood from individual trees.

Utilizing a greater percentage of the tree through improved or new techniques of veneering or comminution, for the production of new or improved reconstituted products.

- (3) **Reducing ecological damage by forest operations** - Research which provides for the economic recovery of resources from forests while raising potential productivity and reducing impacts to the ecological structure of the area of operation.

- (4) **Developing technology that facilitates the control of wildfires on forest lands** - Research that provides systems for detecting and managing wildfires; systems for reducing fuel loads in forests; tools and equipment for improving the efficacy and safety of fire fighters on the ground and in the air; communication and navigation systems for improving the coordination of fire management activities.

- (5) **Developing new products or technologies to increase the use of wood** - Increasing the use of wood in construction materials and other industrial uses through development of value-added wood products, developing better methods for manufacturing wood products, and testing wood products for performance and durability.

8.2 Plant Production and Protection - Biology

Investigators are encouraged to contact Dr. William Goldner, National Program Leader at (202) 401-1719 to arrange a telephone consultation regarding questions about the suitability of research topics (or at wgoldner@csrees.usda.gov.)

(A) Scope of Research

The objective of this topic is to examine means of enhancing crop production by applying biological approaches to reducing the impact of harmful agents, developing new methods for plant improvement, and developing new crop plants, and new genotypes of existing crop plants with characteristics that allow their use in new commercial applications.

(B) Suggested Subtopics

Examples of appropriate subtopics for research proposals from small businesses include, but are not limited to the following:

- (1) Plant improvement** - Improving the efficiency of crop production by adapting innovative methods to traditional plant improvement and biotechnology, including but not limited to: molecular biology, mutagenesis; genomics; tissue culture; and embryogenesis to produce crops with improved quality, yield and agronomic, horticultural, or economic traits.
- (2) New crops** - Developing new crop plants (both terrestrial and aquatic) as sources of food or ornamental products.
- (3) Plant protection** - Reducing the impact of plant pathogens, insect pests, and abiotic stress on crop plants; increasing plant resistance to plant pathogens, insect pests, and abiotic stress.

(C) Special Emphasis areas for FY 2007: SBIR is encouraging the submission of proposals focusing on the following problem areas. Additional consideration will be given to proposals addressing the development of products, process, and services for US production of specialty crops (fruits, nuts, vegetables, nursery, and greenhouse crops):

- (1) Improved plant disease diagnostics (Accurate, rapid, and cost-effective identification of causal agents in specialty crop plants at the earliest possible time relative to manifestation of disease)**
- (2) Disease resistant specialty crops**
- (3) Biological approaches to improving commercial floricultural production (technology to improve the competitiveness of US production of flowering potted plants, bedding plants, seasonal crops, annuals, perennials and cut flowers.**
- (4) Diagnostics for weedy invasive species rapid identification (for use by land managers, landscapers, nurseries, and consumers)**
- (5) Biological approaches to improving commercial ornamental nursery production (technology to improve the competitiveness of US woody plant production, e.g. flowering shrubs, shade trees)**

8.3 Animal Production and Protection

Investigators are encouraged to contact Dr. Peter Burfening, National Program Leader at (202) 401-5823 to arrange a telephone consultation regarding questions about the suitability of research topics (or at pburfening@csrees.usda.gov.)

(A) Scope of Research

The overall objective of this topic area is to develop knowledge that will enable producers of animals of agricultural importance to increase production efficiency and to assure a reliable, safe and secure supply of animal protein and other animal products while conserving resources and reducing costs of production. Proposals are also solicited in the area of animal biosecurity and traceability

Proposals dealing with animal manure management should be submitted to topic area 8.11 and not this topic area.

(B) Suggested Subtopics

Examples of appropriate subtopics for research proposals from small businesses include, but are not limited to the following:

(1) Animal Production

- (a) Animal nutrition and growth** - Research directed at understanding the interrelationships between alimentary microbial ecosystems, digestive processes, and the host animal, and providing nutritional characterization of feedstuffs and integrated nutrient management to enhance growth, lactation, and overall production efficiency.
- (b) Animal reproduction** Research to improve or otherwise control the reproductive process.
- (c) Animal genetics and breeding** - Germplasm improvement in animals of agricultural importance that will provide animals with superior characteristics in areas such as reproduction, growth and development, lactation egg production, lean-to-fat ratios, and disease resistance. The development of sensitive and rapid DNA-based tests (SNPs) for gene of importance in animals of agricultural importance is specifically solicited.
- (d) Animal Well-Being** - Development of equipment, facilities or management systems that promote animal welfare during production, transport and harvest. Commercialization of training systems or educational programs for industry personnel or certification assessment programs creates opportunities to improve animal welfare.

(2) Animal Protection/Biosecurity

- (a) Diagnostic tests** - Development of diagnostic tests for specific diseases and agricultural chemicals which pose a health hazard to animals of agricultural importance.
- (b) Therapeutic methods** - Treatment or treatment methods for acute or chronic health problems of animals of agricultural importance caused by specific infectious or non-infectious agents, parasites and other animal health hazards.
- (c) Immunization methods** - Vaccines, bacterins or other methods such as dietary or nutritional modulation to establish or enhance resistance of animals of agricultural importance to infectious diseases and parasites. Emphasis on mass immunization methods against agents of importance to large scale confined livestock or poultry production systems is specifically solicited.
- (d) Integrated Biosecurity and Disease Management** - Develop systems based plans and programs to provide national scale protection from natural or human-induced introduction of pathogens. Plans should identify local, state, and national resources and requirements in order to provide realistic information tools. These tools would be to detect introductions as early as possible and prevent establishment of pathogens by containing and eradicating the infestation.

8.4 Soil and Water Resources

Investigators are encouraged to contact Dr. Charles Cleland, National Program Leader at (202) 401-6852 to arrange a telephone consultation regarding questions about the suitability of research topics (or at ccleland@csrees.usda.gov.)

(A) Scope of Research

The objective of this research area is to develop technologies for conserving and protecting soil and water resources while sustaining optimal farm and forest productivity and the manufacture of resulting agricultural commodities (proposals related to air pollution caused by animal wastes should be submitted to the Animal Manure Management topic area (8.11)). Proposals need to address some aspect of agriculture or make clear how the proposed project would impact agriculture.

(B) Suggested Subtopics

Examples of appropriate subtopics for research proposals from small businesses include, but are not limited to the following:

- (1) Water Quality and Conservation** - Develop new and improved technologies to optimize water conservation, monitor the quality of surface water and groundwater resources for biotic and abiotic pollutants, develop improved methods for the reuse of waste water, and remediate and restore water resources that impact agriculture and forestry operations.
- (2) Irrigation** - Develop improved irrigation technologies that will provide more efficient and cost-effective delivery of water and chemicals, and develop new irrigation methods that allow for more efficient use of water and more accurate delivery of water to where it is needed.
- (3) Soil Erosion** - Develop better methods for preventing soil erosion by wind and surface water runoff, and for monitoring wind erosion and sediment transport.
- (4) Soil Quality** - Develop new technologies for measuring soil properties, soil nutrient content and the physical and chemical nature of soil, and research new technologies that enhance soil properties while restricting adverse environmental impact and develop improved methods to remediate degraded soils.

8.5 Food Science and Nutrition

Investigators are encouraged to contact Dr. Siva Sureshwaran, National Program Leader at (202) 720-7536 to arrange a telephone consultation regarding questions about the suitability of research topics (or at ssureshwaran@csrees.usda.gov.)

(A) Scope of Research

The objectives of food science and nutrition research programs are to develop new knowledge and a better understanding of the characteristics of the foods we eat and their nutritional impact; to apply new knowledge to improve our foods and our diets; and to systematically apply new knowledge to the production of useful new food products, processes, materials and systems, including application of nutritional information to consumer foods and food service systems.

(B) Suggested Subtopics

Research opportunities are many and varied. Areas appropriate for innovative research proposals from small business concerns might include, but not necessarily be limited to, the following:

- (1) **Chemistry and biochemistry** - Novel or rapid assay or bioassay techniques for food constituents, nutrients, properties, or interactions. Quality control techniques or rapid methods for in-plant nutrient analyses are needed.
- (2) **Microbiology and toxicology** – Improved food sample preparation methods (separation and/or concentration of agent) and rapid, efficient methods for determining presence of organisms and detecting the development of toxic metabolites, including novel screening methods for threat agents, (e.g., anthrax, ricin, botulinum toxin, pesticides) or surrogates for threat agents; and systems for determining shelf-life and “pull date” of food items, are needed.
- (3) **Processing, Packaging and Equipment** - Methods for automation of processes and tests; rapid analyses and cataloging of physical properties; non-thermal processing; processing parameters, including the development of processes that will ensure destruction of agents without overly impacting the normal organoleptic properties of the food; package design, including active packaging, intelligent packaging and anti-tampering technologies (e.g., improved tamper-resistant seals for packages; tracking devices for packaged foods; detection technology for package integrity); design of material, energy- and water-efficient processes for small industries; development of specialty products or processes, including novel compounds that could be used for decontamination of surfaces contaminated by agents; on-line monitoring and control of nutrient, ingredient, or additive levels. Development of closed systems or anti-tampering systems for food processing equipment that still allow for easy cleaning and sanitizing of same equipment are also of interest.
- (4) **Economics and statistics** - Improved sampling procedures; cost/benefit analyses; and modeling systems, including distribution, warehousing and retailing systems.
- (5) **Nutrition Education** - Developing and using information technology to convey important nutritional information and awareness to the public; and developing and using community based interventions to advance healthy lifestyles at work, at school, at home, and at play/leisure and to increase awareness of health issues (e.g. obesity).

8.6 Rural and Community Development

Investigators are encouraged to contact Dr. Siva Sureshwaran, National Program Leader at (202) 720-7536 to arrange a telephone consultation regarding questions about the suitability of research topics (or at ssureshwaran@csrees.usda.gov.)

(A) Scope of Research

The objective of this research area is to foster, promote, or improve the well-being of rural Americans. This program supports research that will result in commercial products or services that are focused on issues and problems related to the economic development and social enhancement of people, organizations, and institutions in rural areas and small towns. Applications may be submitted for the development of new technology or for the utilization of existing technology, to address important issues and/or solving significant problems in rural America. All applications should explicitly discuss the specific rural problem or opportunity that will be examined and how this technology will successfully address the problem or opportunity. The applications need not to be centered on agriculture, per se, but may be focused on any area (e.g., energy, homeland security, health care, economics) that has the potential of providing significant benefits to rural Americans. Proposals that focus on small and mid-size farms should be directed to the new topic area 8.12 Small and Mid-sized Farms. Applications submitted to this topic should include a market feasibility study as one of the research objectives.

(B) Subtopics

The four subtopics under the rural and community development topic are:

- (1) Increase reliance on renewable energy** – A goal for this topic area is to help enhance the reliance on renewable energy. This can be accomplished through the substitution of renewable energy for fossil fuels, development of renewable energy and conservation of energy in rural economies. Proposals submitted should include an objective to assess the impacts of the proposed project on rural and community development. In FY 2007, special emphasis is given to development and conservation of energy, see 8.6 (C).
- (2) Enhance homeland security** – Another goal for this topic is to enhance homeland security by helping rural communities to become more sustainable and resilient when faced with all types of hazards (including intentional acts such as terrorism and natural hazards or unintentional events such as hurricanes). In FY 2007, special emphasis is given to natural hazards, see 8.6 (C).
- (3) Improve service delivery** – The third goal is the integration of new technologies to improve the service delivery capabilities of local governments and public institutions. Areas of interest include information and managerial systems that improve the efficiency and effectiveness of local governments, especially in critical areas such as transportation, telecommunications and health care. Proposals submitted should include an objective to assess the impacts of the proposed project on quality of life in rural communities.
- (4) Promote job creation and income growth** – The final goal is to promote job creation and income growth by strengthening the small business (off-farm) sector of the rural economy and utilizing agricultural or rural resources. Areas of interest include the development of products or services that enhance the availability and capability of entrepreneurs; development of agricultural or rural resources based value-added activities; development of rural tourism; and innovations related to e-commerce to broaden markets for rural businesses.

(C) Priorities for FY 2007: As applications to this topic area can address a wide range problems or opportunities under any of the four subtopics listed above, in FY 2007, priority consideration will be given to applications addressing the development of products, processes and services focusing on:

- (1) Under subtopic #1: development and conservation of energy.** Topics may include the development of renewable energy technologies, including bio-fuels, solar and/or wind energy, and technologies that enhance energy efficiency.
- (2) Under subtopic #2: reducing the vulnerabilities of rural communities from natural or unintentional hazards** (i.e., including preparation, forecast and warning, response, and rebuilding phases of hazard mitigation.)
 - (a)** Enhancing alternative methods of communication in rural communities. (e.g., alternative methods of communication when traditional methods currently available do not function in the aftermath of disasters).
 - (b)** Methods for small businesses to become more disaster resilient (e.g., low cost methods to retrofit buildings, pathways, bridges, etc; innovative methods to broaden markets in the absence of local markets).
 - (c)** New and improved methods of local governance (e.g., use of technology to enhance participatory governance, public safety, etc).

- (d) Programs to attract and retain small businesses in affected areas (e.g., educational and informational programs, services, etc., that reduce the cost of operation; strategies and processes for retaining and utilizing local labor for disaster recovery).

8.7 Aquaculture

Investigators are encouraged to contact Dr. Charles Cleland, National Program Leader at (202) 401-6852 to arrange a telephone consultation regarding questions about the suitability of research topics (or at ccleland@csrees.usda.gov.)

(A) Scope of Research

The objective of this research area is to enhance the knowledge and technology base necessary for the continued growth of the domestic aquaculture industry as a form of production agriculture. Emphasis is placed on research leading to improved production efficiency and increased competitiveness of private sector aquaculture in the United States. Studies on commercially important (or potentially important) species of fish, shellfish, and plants, from both freshwater and marine environments, can be addressed.

(B) Suggested Subtopics

Examples of appropriate subtopics for research proposals from small businesses include, but are not limited to the following:

- (1) **Reproductive Efficiency** - Novel or innovative approaches to improve reproductive efficiency in aquaculture including: greater control of maturation, ovulation, and fertilization; improved gamete and embryo storage; improved larval rearing techniques; enhanced reproductive performance of broodstock; improved methods for cryopreservation of sperm and embryos; and methods to control sex determination.
- (2) **Genetic Improvement** - Novel or innovative approaches to improve production efficiency through genetic improvement of aquacultural stocks including: genetic mechanisms of sex determination; genetic basis for inheritance of commercially important traits such as growth, cold tolerance, and pathogen susceptibility; identification of major genes affecting performance; application of molecular biology and genomics and the integration of this technology into breeding programs; performance evaluation of aquacultural stocks and utilization of crossbreeding and hybridization.
- (3) **Integrated Aquatic Animal Health Management** - Novel or innovative approaches to reducing acute and chronic losses related to aquatic animal health in aquaculture production systems through an integrated holistic approach including: physiological stress related to the quality of the aquatic production system; genetic, environmental, and nutritional components of aquatic health management; control of predation in aquaculture production systems; development of new vaccines or immunization procedures to enhance resistance to infectious diseases and parasites; development of diagnostic tests for specific diseases that pose a health hazard; and development of improved treatment methods for acute or chronic health problems caused by specific infectious or non-infectious agents, parasites, injuries, and chemical and toxic agents.
- (4) **Improved Production Systems and Management Strategies** - Novel or innovative approaches to improve existing or alternative production system design and management strategies including: development of biological, engineering, and economic design criteria and models; enhancement of water quality in existing production systems through aeration, flow patterns, etc.; characterization, handling and treatment of effluent from aquacultural production systems; improved harvesting methods and strategies; and improved operating efficiencies for recirculating systems.

(5) Plant Production Systems - Novel or innovative approaches to improve the efficiency of algal production systems including: identification of new species with improved nutritional profile for use in feeding to other aquacultural species or as a source of valuable human food supplements; development of improved bioreactor technology; and development of better methods for harvesting algal biomass.

(6) Production of Non-Food Products - Novel and innovative approaches to use aquaculture systems to produce high value products for use in biomedical, environmental, and industrial applications.

8.8 Industrial Applications

Investigators are encouraged to contact Dr. William Goldner, National Program Leader at (202) 401-1719 to arrange a telephone consultation regarding questions about the suitability of research topics (or at wgoldner@csrees.usda.gov.)

(A) Scope of Research

The objective of this research area is to promote the use of biobased products by developing new or improved technologies that will lead to increased production of industrial products from agricultural materials. This research will lead to new opportunities to diversify agriculture and enhance agriculture's role as a reliable supplier of raw materials to industry. Appropriate research areas are: development of new crops that have the potential of producing raw materials that can be converted into useful industrial products; development of procedures for enhanced recovery of critical raw materials from agricultural commodities; development of improved technology for converting agriculturally derived raw materials into useful industrial products; and development of industrial products derived from agricultural materials to make them more effective and/or more cost competitive with non-agriculturally derived industrial products.

(B) Subtopics for FY2007

Acceptance of proposals for the FY2007 solicitation will be limited to:

- (1) Bio-based Fuels** - New and improved technology for conversion of agriculturally important biomass material into alcohol and other products to be used as fuel (including but not limited to ethanol, hydrogen, biodiesel); fuel additives; and co-products from the biofuel production stream that will optimize the economic feasibility of the production of biofuels .
- (2) New Crops for the Production of Non-food Bio-based Products** – Identification, testing, and development of new crops that will provide new local or regional economic opportunities for farmers and growers to produce raw materials for the production of non-food bio-based products.

8.9 Marketing and Trade

Investigators are encouraged to contact Dr. Siva Sureshwaran, National Program Leader at (202) 720-7536 to arrange a telephone consultation regarding questions about the suitability of research topics (or at ssureshwaran@csrees.usda.gov.)

(A) Scope of Research

The objective of this research area is to identify an array of innovative marketing strategies to increase sales of agricultural, forestry, and aquacultural products (raw commodities, plus processed, value-added food, feed, and industrial products derived from these commodities), both domestically and abroad. This research will assess and evaluate the type, size, and location of market opportunities for specific U.S. products or categories of products; develop specific strategies

to gain entry into these markets or expand sales in current markets for specific products or categories of products; identify barriers to trade and develop specific strategies that neutralize these barriers; develop advanced information systems that provide more complete, relevant, and timely information relative to temporal marketing opportunities; and develop integrated management systems that would permit maximum efficiencies in assembling, handling, processing, packaging, transporting, and shipping products. Where appropriate, foreign travel may be approved provided justification is adequately documented in the proposal.

(B) Suggested Subtopics

Examples of appropriate subtopics for research proposals from small businesses include, but are not limited to the following:

- (1) Development of Marketing Systems** - Develop post harvest, integrated management systems that take raw, partially processed, or fully processed products and improve the efficiency in assembling, packing, processing, and shipping products to “niche,” regional, national, and international markets. Included in this subtopic would be the development of methods that define strategies to:
 - (a) Better integrate collection/assembly system.
 - (b) Minimize seasonal variations in production and processing levels.
 - (c) Improve product characteristics through the use of such systems.
 - (d) Design more efficient packaging, storing, and transportation systems, including intermodal systems.
- (2) Development of Innovative Real-Time/Near Real-Time Information Systems** - Develop current and projected economic information on product sales, potential demand, prices, quality standards and specifications, varietal and packaging preferences, and relevant time periods in either real-time, or near-real-time to enable firms to respond more rapidly to national and international marketing opportunities. Also involved in this subtopic would be innovative information products that can inform businesses of the availability, features, and economics of new technologies and innovations, preferably using electronic media with interactive features.
- (3) Assessments and specification of marketing opportunities** - Identify new national and international markets, or the potential for increasing sales of U.S. forestry, agricultural, and aquacultural products in these markets. Quantify to the extent possible, market characteristics determining demand, product demand, and market structure; other changes relative to consumption patterns at home and abroad; shifts in retail and wholesale marketing; shifts in food manufacturing; and other changes that are relevant to successful marketing.
- (4) Designing or Establishing Market-based Mechanisms for Enhanced Environmental Benefits** - Encourage market-based, instead of regulatory, approaches to reduce or mitigate adverse agri-environmental consequences or to promote positive agri-environmental outcomes while simultaneously preserving economic growth. Pollutants or resources of interest may include air pollutants (carbon or greenhouse gas emissions), point- and non-point source water pollutants, water supply, or fisheries/wildlife habitat. Areas of interest include development of educational programs, and information and managerial systems to establish the market (baseline databases; evaluation of tradeoffs among various sustainable targets; identification of characteristics of market/institutional conditions for successful tradable permits, conservation credit offsets, or

similar incentive-based policy vehicles; measuring, monitoring and enforcing mechanisms that facilitate such policy vehicles, etc).

8.10 Wildlife

Topic area 8.10 Wildlife has been discontinued and will no longer be offered as a part of the USDA SBIR program. Applicants with proposals relevant to this topic area may be able to submit these proposals to another topic area. Prior to submitting the proposal to one of these topic areas, please contact one of the National Program Leaders (see section 1.5).

8.11 Animal Manure Management

Investigators are encouraged to contact Dr. Richard Hegg, National Program Leader at (202) 401-6550 to arrange a telephone consultation regarding questions about the suitability of research topics (or at rhegg@csrees.usda.gov).

(A) Scope of Research

The objective of this research area is to develop new or improved technologies and environmentally sound approaches for improved management of animal manures. This research area may include other materials combined with the manure such as bedding, litter, and water. The objective of the research is intended to reduce the adverse impact of animal manure on the environment and people, and improve the economics of animal production by optimizing manure management technologies and creating value-added products derived from animal manure. This program will focus exclusively on terrestrial animal production (including poultry). Proposals dealing with aquacultural waste should be submitted to Topic Area 8.7.

(B) Suggested Subtopics

Examples of appropriate subtopics for research proposals from small businesses include, but are not limited to the following:

- (1) Systems for Handling Animal Manure** – Development of methods to reduce the impact of animal production systems on the environment by establishment of better ways to:
 - (a) Handle both liquid and solid animal manure.
 - (b) Improve the efficiency of collection systems.
 - (c) Improve the effectiveness of lagoons for treating manure.
 - (d) Develop better methods for utilization of animal manure in ways that do not adversely impact the environment.
- (2) Air Emissions** - Development of methods for the abatement of air emissions stemming from animal manure management systems.
- (3) Water Resources** - Development of innovative, energy-efficient, cost effective products, processes, or services to reduce the impact of animal manure on surface and groundwater resources.
- (4) Value-added Products** – Development of innovative ways to process animal manure into value-added products.

8.12 Small and Mid-Size Farms

Investigators are encouraged to contact Dr. Charles Cleland, National Program Leader at (202) 401-6852 to arrange a telephone consultation regarding questions about the suitability of research topics (or at ccleland@csrees.usda.gov.)

(A) Scope of Research

The objective of the research area is to promote and improve the sustainability and profitability of small and mid-size farms and ranches (where annual sales of agricultural products are less than \$250,000 for small farms and \$500,000 for mid-size farms - hereafter referred to as small farms). The vast majority of farms in this country are small and they play an important role in the agricultural sector. The viability and sustainability of small farms is important to the Nation's economy and to the stewardship of our biological and natural resources. Small farms are also critical to sustaining and strengthening the leadership and social fabric of rural communities and applicants are strongly encouraged to emphasize how their project would contribute to the well being of rural communities and institutions. In particular, applicants should emphasize how the results of their project would be disseminated to other small farmers and provide benefit to the small farm community. Emphasis is placed on the cultivation of alternative and specialty crops, production of speciality animal species, innovative ways to market these farm products, improvements in farm management and farm safety, more efficient use of natural resources in agriculture, and educational outreach efforts to small farmers.

(B) Suggested Subtopics

Examples of appropriate subtopics for research proposals from small businesses include, but are not limited to the following:

- (1) **New Agricultural Enterprises** - Efforts are needed to develop new agricultural enterprises that are small scale and focused on speciality farm products, both plant and animal, and on innovative ways to market these farm products through direct marketing, such as farmers markets or cooperatives where the financial return to the farmer is optimized, or through specialty market outlets that offer a higher financial return. Emphasis is encouraged on organic and natural foods, specialty animal products such as free-range poultry or natural beef, non-food specialty crops such as medicinal herbs, and value-added food and non-food products.
- (2) **Farm Management** - Efforts are needed to develop tools and skills that are appropriate for small farms that will enhance the efficiency and profitability of small farms. New tools are also needed that will enhance farm safety. Development of new risk management tools to facilitate better planning is needed. Innovative ways to promote agro-tourism as a way to enhance farm profitability is encouraged.
- (3) **Natural Resources** - Efforts are needed to develop farming methods scaled appropriately for small farms that are directed at more efficient use of natural resources. Particular emphasis is needed to develop sustainable farming practices.
- (4) **Educational Outreach** - Efforts are needed to develop new tools to ensure that new generations of small farmers have access to the information and resources they need to operate their small farms on a sustainable and profitable basis.

8.13 Plant Production and Protection - Engineering

Investigators are encouraged to contact Dr. William Goldner, National Program Leader at (202) 401-1719 to arrange a telephone consultation regarding questions about the suitability of research topics (or at wgoldner@csrees.usda.gov.)

(A) Scope of Research

The objective of this topic is to examine means of enhancing crop production by reducing the impact of harmful agents and developing effective crop production systems that are economically and environmentally sound. Projects that promote energy conservation or efficiency are strongly encouraged.

(B) Suggested Subtopics

Examples of appropriate subtopics for research proposals from small businesses include, but are not limited to the following:

- (1) Improved crop production methods or strategies** - Enhancing the efficiency of crop production by utilizing innovative methods and equipment for planting, growing and harvesting crop plants, including optimization of inputs and reduction of environmental impacts by implementing the use of precision farming technology, sensors, information technology, and remote sensing.
- (2) Plant protection** - Reducing the impact of plant pathogens, insect pests and competing vegetation on crop plants by developing efficient and environmentally safe pesticide and herbicide usage equipment, especially technology to monitor and manage plant disease, insect pests, or abiotic stress at the earliest stages of their manifestations.
- (3) Energy conservation** - Developing crop management systems, farm and greenhouse structures, and waste utilization strategies that promote energy conservation and efficiency, including the development of technology for the economic use of alternative/renewable energy resources.

(C) Special Emphasis areas for FY 2007: SBIR is encouraging the submission of proposals focusing on the following problem areas. Additional consideration will be given to proposals addressing the development of products, process, and services for US production of specialty crops (fruits, nuts, vegetables, nursery, and greenhouse crops):

- (1) Post-harvest handling of specialty crops, including transportation and quality preservation**
- (2) Reduction of manual labor in specialty crop production, harvesting and post-harvest handling (technology to improve the competitiveness of US specialty crop production)**
- (3) Commercial floriculture production technology (technology to improve the competitiveness of US flowering potted plant, bedding plant, and cut flower production, seasonal crops, annuals, perennials)**
- (4) Identity/pathway preservation technologies for specialty crops (technology facilitating the rapid and accurate tracing of specialty crops from producer to retail distributor)**

9.0 SUBMISSION FORMS AND CERTIFICATIONS

All of the necessary forms and instructions will be found on the Grants.gov. Applicants can access the appropriate page on Grants.gov by visiting the USDA SBIR funding opportunity page at <http://www.csrees.usda.gov/fo/sbir>. Clicking on the Funding Opportunity Number listed near the bottom of the page will link the applicant directly to the information and forms necessary to submit through Grants.gov. **Please note: Applicants must have successfully completed the entire registration process (see subsection 3.2) prior to being able to submit a proposal through Grants.gov. All attachments must be submitted in PDF format (see subsection 3.2 (C)).**

10. 0 SAMPLE PROPOSALS FROM USDA SBIR SOLICITATION

These proposals, which resulted in Phase I awards, were submitted under previous USDA SBIR Program Solicitation guidelines. As such, these proposals do not accurately reflect the current format nor the forms and attachments that are required for submission through Grants.gov. These sample proposals are provided solely for general guidance. In the original proposal, the cover page was signed by both the project director and authorized organizational representative. Social security numbers, budgets and some material containing biographical information have been deleted to protect confidentiality.

Visit the web to see the sample proposals available only in PDF version at:
www.csrees.usda.gov/funding/sbir/sbir_sample.html